City of Dublin
Climate Action Plan

October 2010

Letter from the Mayor

The Dublin City Council has adopted the following Mission Statement: "The City of Dublin promotes and supports a high quality of life which ensures a safe and secure environment that fosters new opportunities." It is with this mission in mind that I present to you our Climate Action Plan. Over the past several years, the City has worked diligently to ensure a high quality of life for its residents by enacting sound and effective environmental programs. In fact, the City's many environmental goals have established it as a leader in environmental stewardship. This document codifies much of the City's environmental work and provides an overarching plan for further protecting our community and maintaining our goal of a high quality of life for our residents and businesses.

The City of Dublin has put considerable effort into the creation of a more sustainable environment to protect its current and future generations. As a result, the City has developed, implemented, and is actively monitoring programs that manage its natural resources and eliminate waste. Specifically, the City has placed significant emphasis on promoting conservation efforts and establishing renewable energy sources. In addition, the City plays a primary role in administering and enforcing many environmental laws that protect our community. By way of example, in the last five to 10 years, the City has built facilities with more energy efficient and green building principles; legislated transit-oriented, high-density and mixed use developments to minimize the need for automotive travel; improved bicycle pathways; enhanced our recycling and organics collection programs; installed more energy efficient lighting; and convened a City Council-initiated Green Initiatives Taskforce, which engaged community stakeholders in the process of developing important environmental objectives. The City of Dublin has been, and will continue to be, at the forefront of the environmental movement.

While this Climate Action Plan will primarily serve the community as a greenhouse gas reduction strategy, the plan is also an invitation for the community to join with us in continuing to improve the quality of life for everyone who works, stays or plays in Dublin. While the City can do many things, it is also up to you, the citizens, students, organizations and businesses of this great community to take the initiative to do more in your daily lives. By doing simple things such as reducing your energy consumption, increasing your recycling, increasing your use of alternative transportation, and buying local, you can and will play a large role in making Dublin a better, more sustainable city. Remember every contribution helps no matter the size, so please join us in these efforts. Thank you for your interest and participation!

Sincerely,

Tim Sbranti

Tim Sbranti, Mayor
City of Dublin

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City of Dublin Climate Action Plan
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Background: The Alameda County Climate Protection Project

To date, all 14 cities in Alameda County, California, are members of ICLEI – Local Governments for Sustainability (ICLEI) and are participating in the **Alameda County Climate Protection Project (ACCPP)**. The participating jurisdictions include:

Alameda	Dublin	Livermore	Pleasanton
Alameda County	Emeryville	Newark	San Leandro
Albany	Fremont	Oakland	Union City
Berkeley	Hayward	Piedmont	

The ACCPP was launched by ICLEI in partnership with the Alameda County Waste Management Authority & Recycling Board (StopWaste.Org) and the Alameda County Conference of Mayors. In committing to the project, these jurisdictions embarked on an ongoing, coordinated effort to reduce greenhouse gas (GHG) emissions, improve air quality, reduce waste, cut energy use, and save money. Toward that end, ICLEI and StopWaste.Org assisted each participating jurisdiction to conduct a baseline inventory of GHG emissions, set a target for reducing community-wide emissions, and develop a climate action plan (CAP) that consists of policies and measures that, when implemented, will enable each jurisdiction to meet its target.

About Alameda County

Alameda County is a metropolitan region of the San Francisco Bay Area. The U.S. Census Bureau's Population Division estimates the county's population at 1.45 million (2005), the 7th most populous county in California. Like other metropolitan areas, inhabitants of the county and the cities therein contribute to the problem of excess GHGs, while also holding immense potential to contribute to the solution. The energy consumed and the waste produced within the county's boundaries result in thousands of tons of heat-trapping GHG emissions, but, as is evidenced by the widespread municipal involvement in the ACCPP, local government participants are firmly committed to building on existing efforts to reduce these emissions.

The first step in managing GHG emissions is to establish an inventory of those emissions. Below is a chart of global GHG emissions, which includes the amount of metric tons of carbon dioxide equivalent (MT CO_2e) that is generated worldwide, within the United States, the State of California, and in Alameda County. For context, California is the 16th largest emitter in the world—if it were considered a country of its own—second only to Texas in the U.S. Per capita emissions in California, however, are among the lowest in the U.S. Further, emissions in Alameda County are less than the California average.

About the City of Dublin

The City of Dublin consists of approximately 14.9 square miles of land area lying in eastern Alameda County, also known as the Livermore-Amador Valley, or the Tri-Valley area. Surrounding jurisdictions include the City of San Ramon and unincorporated Contra Costa County to the north, unincorporated Alameda County to the east and west and Cities of Pleasanton and Livermore to the south.

Major features in the community include the Interstate 580 freeway, which forms the southern boundary of Dublin and the Interstate 680 freeway which extends in a north-south direction just east of downtown Dublin. The City is also served by the Bay Area Rapid Transit District (BART), with an existing Dublin/Pleasanton Station and a West Dublin Station currently under construction and anticipated to be completed in 2011.

Topographically, the community is generally flat north of the Interstate 580 corridor, transitioning to rolling hillsides in the northern and western portions of Dublin.

Dublin's major land uses include the older commercial downtown area north of the Interstate 580 freeway, generally located between San Ramon Road and Village Parkway. Uses surrounding the downtown area are comprised primarily of low density, single-family dwellings.

Parks Reserve Forces Training Area (RFTA, also known as Camp Parks) is located in the approximate center of Dublin and is used for military training purposes.

The newest portion of Dublin is Eastern Dublin, consisting of approximately 4,200 acres of land located east of Parks RFTA, north of Interstate 580, south of the Alameda County-Contra Costa County line and west of the unincorporated Doolan Canyon area. Eastern Dublin has been urbanizing since adoption of the Eastern Dublin General Plan Amendment and Specific Plan in 1993. The area now contains a mix of single-family dwellings, multiple-family dwellings, and commercial and government facility land uses. Completion of the Dublin/Pleasanton BART Station has facilitated development of high-density housing complexes in this portion of Dublin.

About the Sponsor: StopWaste.Org

The Alameda County Climate Protection Project was financially sponsored by StopWaste.Org in an effort to support its member agencies in building a region that is continually progressing toward environmentally and economically sound resource management. StopWaste.Org is a public agency formed in 1976 by a Joint Exercise of Powers Agreement between Alameda County (County), each of the 14 cities within the county, and two sanitary districts. The agency serves as the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board. In this dual role, StopWaste.Org is responsible for the preparation and implementation of the County Integrated Waste Management Plan and Hazardous Waste Management Plan and the delivery of voter-approved programs supporting waste reduction, recycled product procurement, market development, and grants to nonprofit organizations to help the County achieve its 75% waste diversion goal.

Key program areas in which StopWaste.Org provides technical and financial assistance to its member agencies include:

- business recycling and waste prevention services through the StopWaste Partnership;
- organics programs, including residential and commercial food waste collection and the promotion of Bay-Friendly Landscaping and gardening;
- green building and construction and demolition debris recycling;
- market development; and
- education and outreach, including recycling at schools.

As is demonstrated in this document, many of StopWaste.Org's program areas dovetail nicely with municipal efforts to reduce GHG emissions. While the agency's charge to reduce the waste stream in Alameda County may seem external to traditional emissions reduction strategies, it is working closely with ICLEI in an ongoing way to illustrate the emissions benefits of waste reduction and recycling. StopWaste.Org and ICLEI have compiled results in this report that show how practices such as residential and commercial recycling and composting, buying recycled products, green building, and Bay-Friendly Landscaping play important roles in a local government's strategy for mitigating emissions. GHG mitigation can be seen as an umbrella under which the agency's programs play a substantial role.

About ICLEI and the Cities for Climate Protection Campaign

ICLEI's mission is to improve the global environment through local action. Cities for Climate Protection® (CCP), ICLEI's flagship campaign, is designed to educate and empower local governments worldwide to take action on climate change. ICLEI provides resources, tools, and technical assistance to help local governments measure and reduce GHG emissions in their communities and their internal municipal operations.

ICLEI's CCP campaign was launched in 1993 when municipal leaders, invited by ICLEI, met at the United Nations in New York and adopted a declaration calling for establishment of a worldwide movement of local governments to reduce GHG emissions, improve air quality, and enhance urban sustainability. The CCP campaign achieves these results by linking GHG mitigation with actions that improve local air quality, reduce local government operating costs, and improve quality of life by addressing other local concerns. The CCP campaign seeks to achieve significant reductions in U.S. GHG emissions by assisting local governments in taking action to reduce emissions and realize multiple benefits for their communities.

ICLEI uses the performance-oriented framework and methodology of the CCP campaign's five milestones to assist U.S. local governments in developing and implementing harmonized local approaches to reduce the effects of GHGs and air pollution emissions, with the additional benefit of improving community livability.

The milestone process consists of:

- Milestone 1: Conduct a baseline emissions inventory and forecast.
- Milestone 2: Adopt an emissions reduction target.
- Milestone 3: Develop a CAP to reduce emissions.
- Milestone 4: Implement policies and measures.
- Milestone 5: Monitor and verify results.

Table 1 – World Greenhouse Gas Emissions Scenarios

Locations	GHGs MT CO_2e/yr	Percent of World GHG Emissions	Percent of U.S. Emissions	Percent of California Emissions
World (2000)	37,151,615,800	100.0%		
United States (2000)	7,572,613,400	20.4%	100%	
California (2004)	597,486,768	1.6%	7.9%	100.0%
ACCPP Region (2005) [1,2,3]	6,292,853		0.083%	1.105%
ACCPP Governments (2005)	88,746			0.015%

Notes: ACCPP = Alameda County Climate Protection Project; GHG = greenhouse gas; MT CO_2e = metric tons of carbon dioxide equivalent emissions

Source: (2000) World and United States emissions from World Resources Institute – Climate Analysis Indicators tool (http://cait.wri.org/). (2004) California emissions from California Energy Commission (http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF). Figures exclude land use related emissions.

[1] Data includes the first 10 cities that joined the ACCPP (Alameda City, Albany, Berkeley, Emeryville, Hayward, Newark, Oakland, Piedmont, San Leandro, and Union City).
[2] The baseline year is 2005 for all cities, except for Albany and Emeryville, which inventoried 2004 emissions.
[3] GHG emissions for ACCPP cities are based on ICLEI GHG Emissions Protocol for Local Governments, which includes end-use energy, transportation, and waste sector within city boundaries. World and United States emissions are based on national GHG inventories, which additionally include fugitive emissions, industrial process emissions, and other modes of transportation.

Fast Facts

2000 worldwide per capita GHG emissions (tons CO_2e)	5.51 MT CO_2e
2004 U.S. per capita GHG emissions (tons CO_2e)	25.34 MT CO_2e
2004 California per capita GHG emissions (tons CO_2e)	18.73 MT CO_2e

Source: 2004, U.S.A. GHG Emissions from EPA (http://www.epa.gov/climatechange/emissions/downloads06/06ES.pdf)

1 metric ton (MT) equals 1.102 short tons.

Alameda County Fast Facts

Population (2005):	**1.45 million**
Number of Autos (2000):	**4.5 million**
Annual Electricity Usage per Capita (2004):	**6,738 kWh**
Annual Natural Gas Usage per Capita (2004):	**330 therms**
Annual Water Usage per Capita (2004):	**46,000 gallons**
Avg. Waste per Person (2004):	**1.03 tons**
Avg. Waste per Business (2004):	**35.0 tons**
Avg. Waste Diversion Rate (2004):	**60%**

Source: StopWaste.org

Executive Summary

The world's population is releasing GHGs as byproducts from combusting fossil fuels, disposing of waste, using energy, and changing land uses and other human activities. Although the United States accounts for only 4% of the world's population, it produces 20.4% of the world's GHG emissions. Within this context, the City of Dublin (City) seeks to be a good environmental steward by curtailing emissions within its jurisdiction. Residents, businesses, and government operations within Dublin released 357,211 MT CO_2e in 2005. Under a business-as-usual scenario, these emissions would grow over the next 15 years (by 2020) by approximately 31.9%, from 357,211 MT CO_2e to 471,205 MT CO_2e. This growth is attributed to new residential and commercial growth expected over this time period.

On July 17, 2007, the City pledged to take action to reduce GHG emissions within the community. The Dublin City Council passed Resolution 139-07, committing Dublin to join other jurisdictions in the ACCPP. In so doing, Dublin committed to ICLEI's five-milestone methodology.

The City is committed to reducing community-wide GHG emissions by ***20% below business-as-usual GHGs emissions by 2020***. The City expects this reduction target to be achieved through a combination of the reduction measures included in this plan and state initiatives, such as the Renewable Portfolio Standards and Assembly Bill 1493 (Pavley). In addition, the CAP employs the BAAQMD GHG efficiency threshold of 6.6 MT CO2e per service population per year as evidence of the City intent to meet the intent of AB 32 to reduce GHG emissions to 1990 level by 2020. The 20% reduction target results in a forecasted efficiency metric of 4.2 MT CO2e per service population for the City in 2020, which is 37% below the BAAQMD threshold.

Local governments play an integral role in reducing GHG emissions because they have direct or indirect control over many emission sources. The Climate Change Scoping Plan (Scoping Plan) adopted by the California Air Resources Control Board (ARB) pursuant to AB 32 states that land use planning and urban growth decisions will play a role in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth.

The City of Dublin is currently implementing numerous programs and projects across multiple sectors that are helping to reduce GHG emissions. Although the City has taken significant steps to address climate change, this is the first document that assembles all of the City's climate action efforts into a centralized plan. Strategies to reduce GHG emissions are organized into 34 reduction measures applicable to community or to municipal activities. These measures represent actions to reduce GHG emissions that City government has taken since 2005. While there may be some policies included within the CAP that existed prior to 2005, such policies were only included within the CAP if the impact of the policy did not occur until after 2005. Simply, the City has attempted to prevent any situation where the double counting of a policy's reduction impact might occur.

The City is committed to continuing actions to reduce GHG emissions and to supplementing these actions in future years if needed to achieve the reduction target. In addition, these actions will result in many other benefits for the Dublin community such as improved environmental quality and public health and a more sustainable business-friendly environment.

The City of Dublin's Climate Action Plan

The City's CAP:

- provides background on actions taken to curb GHG emissions;
- presents Dublin's baseline GHG emissions inventory in 2005 and forecast for GHG emissions in 2020 based on business-as-usual scenario;
- establishes a GHG emissions reduction target of 20% from the 2020 GHG emissions forecast;
- outlines GHG emission reduction policies and measures for transportation/land use, energy, and solid waste and recycling that Dublin will implement and/or is already implementing to achieve its reduction target; and
- presents steps for implementation of the Plan and monitoring and verification of the Plan to achieve the designated emissions reduction target.

This CAP serves as the City of Dublin's qualified GHG Reduction Plan and programmatic tiering document for the purposes of the California Environmental Quality Act (CEQA) for analysis of impacts of greenhouse gas emissions and climate change. The City has determined that the reduction target under the Plan will reduce the impact from activities under the Plan to less than significant under CEQA. Therefore, this Plan may be used for the cumulative impact analysis for future development and projects in the City covered by the Plan. If a proposed project is consistent with the applicable emission reduction measures identified in the CAP, the project would be considered to have a less than significant impact (i.e. less than cumulatively considerable contribution to significant cumulative impact) due to GHG emissions and climate change consistent with Public Resources Code 21083.3 and CEQA Guidelines Sections 15183.5, 15064 and 15130. Please refer to *Chapter IX. Relationship to the California Environmental Quality Act* for additional detail.

I. Introduction

The following sections describe international, federal, state, and local actions being taken to curb GHG emissions.

A. GHG Emission Reduction Action

In 1997, ten thousand (10,000) international delegates, observers, and journalists gathered in Kyoto, Japan, to participate in the drafting and adoption of the Kyoto Protocol, which requires industrialized nations to reduce their collective GHG emissions to 5.2% below 1990 levels. As of January 2007, 162 countries have ratified the protocol. Additionally, since 1995 the annual Conference of the Parties (COP) has met to discuss action and implementation to reduce GHG emissions.

State Action

California has taken significant steps at the state level and has been leading the charge on combating GHG emissions through various pieces of legislation, which include:

Senate Bill 1771 Sher, 2000 – Requires the California Energy Commission (CEC) to prepare an inventory of the state's GHG emissions, study data on global climate change, and provide government agencies and businesses with information on the costs and methods for reducing GHGs. Senate Bill (SB) 1771 also established the California Climate Action Registry to serve as a certifying agency for companies and local governments to quantify and register their GHG emissions for possible future trading systems.

Senate Bill 1078 Sher, 2002 – Established the Renewable Portfolio Standard, which requires electricity providers to increase purchases of renewable energy resources by 1% per year until they have attained a portfolio of 20% renewable resources.

Assembly Bill 1493 Pavley, 2002 – Requires the Air Resources Board (ARB) to develop and adopt regulations that achieve the maximum feasible reduction of GHGs from vehicles primarily used for noncommercial transportation. To meet the requirements of Assembly Bill (AB) 1493, in 2004, ARB approved amendments to California's existing standards for motor vehicles. These amendments require automobile manufactures to meet fleet-averaged GHG emission limits for all passenger cars, light-duty trucks, and medium-duty passenger vehicle weight classes, beginning in 2009. Cars sold in California are anticipated to emit an average of 16% less GHGs than current models.

Executive Order S-3-05, 2005 – Proclaims that California is vulnerable to the effects of climate change and establishes targets for GHG emissions, which include reducing GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.

Assembly Bill 32 Núñez & Pavley, 2006 – Institutes a mandatory limit on GHG emissions, which is to reduce emissions in California to 1990 levels by the year 2020, or 30% below forecasted levels. The bill also directs ARB to establish a mandatory reporting system to track and monitor emission levels and requires ARB to develop various compliance options and enforcement mechanisms. This led to creation of the *Climate Change Scoping Plan*.

Assembly Bill 811, 2007 – Authorizes all local governments in California to establish special districts that can be used to finance solar or other renewable energy improvements to homes and businesses in their jurisdiction.

Senate Bill 97, 2007 – Acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA and directed the Governor's Office of Planning & Research to develop guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA. These revisions to the CEQA guidelines took effect in March 2010.

Executive Order S-1-07, 2007 – Identifies the transportation sector as the main source of GHG emissions in California, accounting for more than 40% of statewide GHG emissions. This executive order also establishes a goal to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10% by 2010.

Senate Bill 375 Steinberg, 2008 – Aims to reduce GHG emissions by connecting transportation funding to land use planning. SB 375 creates a process by which local governments and other stakeholders work together within their region to achieve reduction of GHG emissions through integrated development patterns, improved transportation planning, and other transportation measures and policies.

Executive Order S-13-08, 2008 – Directs the Natural Resources Agency to identify how state agencies can adapt to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. This led to creation of the *California Climate Adaptation Strategy*.

Executive Order S-14-08, 2008 – Expands California's Renewable Energy Standard to 33% renewable power by 2020.

California has led the nation in addressing this global issue with the hope that through collective action at the local level, global changes in the way we use resources and develop as a society will change and ultimately reduce the effects of GHG emissions on the human and natural environment.

Local Action

ICLEI- Local Governments for Sustainability

A great deal of work is being done at the local level on climate change as well. ICLEI—Local Governments for Sustainability provides national leadership on climate protection and sustainable development and has been a leader both internationally and domestically for more than 10 years. Since its inception in 1990, ICLEI has grown to include over 1,100 cities in the world. ICLEI was launched in the United States in 1995 and has grown to more than 600 cities and counties. In June 2006, ICLEI launched the California Local Government Climate Task Force as a formal mechanism to provide ongoing input and collaboration in the State of California's climate action process.

U.S. Conference of Mayors Climate Protection Agreement

ICLEI also works in conjunction with the U.S. Conference of Mayors to track progress and implementation of the U.S. Mayors Climate Protection Agreement, launched in 2005, which more than 376 mayors have signed to date, pledging to meet or beat the Kyoto Protocol emissions reduction target in their own communities. By 2010, Alameda County mayors from Alameda, Albany, Berkeley, Dublin, Fremont, Hayward, Newark, Oakland, Pleasanton, and San Leandro signed the U.S. Conference of Mayors Climate Protection Agreement.

Bay Area Air Quality Management District

In June 2010, the Bay Area Air Quality Management District (BAAQMD) adopted CEQA air quality thresholds of significance for use within its jurisdiction. BAAQMD has direct and indirect regulatory authority over sources of air pollution in the San Francisco Bay Area Air Basin, of which the City of Dublin is a part. The overall goal of this effort was to develop CEQA significance criteria that ensure that future development implements appropriate and feasible emission reduction measures to mitigate significant air quality and climate change impacts.

BAAQMD has adopted a threshold of 1,100 MT CO_2e per year or 4.6 metric tons per service population (residents and employees) per year for development projects. The adopted project threshold (1,100 metric tons of CO2e/yr) is equivalent to approximately 60 single-family units, 78 multi-family units, a supermarket exceeding 8,000 square feet and an office park exceeding 50,000 square feet. Projects with emissions greater than the adopted threshold would be required to mitigate to the proposed threshold level or reduce project emissions by a percentage deemed feasible by the lead agency. BAAQMD's approach is to identify the emissions level for which a project would result in less than significant impact under CEQA and would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. If a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact and would be considered to result in a significant impact under CEQA.

Alternatively, a city may prepare a qualified GHG Reduction Strategy that furthers AB 32 goals. BAAQMD encourages such planning efforts and recognizes that careful early planning by local agencies is invaluable to achieving the state's GHG reduction goals. If a project is consistent with an adopted qualified GHG Reduction Strategy that addresses the project's GHG emissions, the Strategy/Plan can be used as a basis for determining that the project would have a less than significant impact (i.e. less than cumulatively considerable contribution) due to greenhouse gas emissions and climate change under CEQA.

CEQA contains standards for Greenhouse Gas Reduction Plans that can be used in the cumulative impacts analysis for projects covered under the Plan (CEQA Guidelines Section 15183.5). BAAQMD recognizes these CEQA standards as meeting the District's standards for a Reduction Strategy. BAAQMD contains some standards in addition to those under CEQA. However, BAAQMD's additional standards are not a legal requirement for CEQA compliance. Nevertheless, the City has developed its CAP to substantially comply with the BAAQMD standards.

The CAP has been developed to meet both the CEQA and BAAQMD standards for a qualified GHG Reduction Plan/Strategy. Below is a description of how the CAP substantially complies with these standards:

(A) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area.

The City of Dublin CAP includes a GHG emissions inventory that quantifies an existing baseline level of emissions for 2005 and projected GHG emissions from a business-as-usual (BAU), no-plan, forecast scenario for 2020 (See *Chapter II. Emissions Inventory*). The baseline year is based on the existing growth pattern. The projected GHG emissions are based on the emissions from anticipated growth through 2020.

Furthermore:

- The baseline inventory includes one complete calendar year of data for 2005. CO_2 is inventoried for residential, commercial/industrial, transportation and waste sectors.
- Business-as-usual emissions are projected in the absence of policies or actions that would reduce emissions. The forecast includes only adopted and funded projects.
- The business-as-usual forecast projects emissions from the baseline year using growth factors specific to each of the different economic sectors.

(B) Establish a level, based on substantial evidence, below which the contribution of GHG emissions from activities covered by the plan would not be cumulatively considerable.

The City of Dublin CAP proposes a reduction target of ***20% below business-as-usual GHGs emissions by 2020***. This target will be adopted by resolution, as a component of the CAP. This reduction target establishes a level below which the contribution to GHG emissions by activities covered under the Plan will be less than cumulatively considerable under CEQA standards. The reduction levels also further GHG reductions consistent with State law, including AB 32 and is consistent with levels adopted by other Climate Action or GHG Reduction Plans in the Bay Area.

Further, the City's CAP employs BAAQMD's GHG efficiency based metric of 6.6 MT CO2e per service population per year as evidence of compliance with the intent of AB 32. As a result of the policies within the CAP and their resultant GHG reductions, the City of Dublin's efficiency metric is well below the established threshold for Forecast Year 2020. The City's efficiency measure for 2020 is projected to be 4.2 MT CO2e per service population per year. The baseline efficiency metric for 2005 is 5.9 MT CO2e per service population per year. Thus, the City of Dublin's reduction goal from the BAU scenario equates to a 29% decrease in per capita GHG emissions between the Base Year and Forecast Year. This scenario highlights the fact that the City will be growing significantly over the 15-year period of the CAP, but during this same time period, the City's GHG emissions will be decreasing significantly on a per individual basis, which is not clearly visible when simply inspecting the BAU scenario. Thus, even though the City will be growing through 2020, it will be compliant with the intent of AB 32 in reducing GHG to 1990 levels by 2020.

(C) Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.

The City of Dublin CAP identifies and analyzes GHG reductions from local and state policies and regulations that may be planned or adopted but not implemented to understand the amount of reductions needed to meet its target. The City's CAP identifies and analyzes the effects of statewide GHG emission reductions including those related to implementation of the Renewable Portfolio Standard (RPS) and Assembly Bill 1493 fuel efficiency standards (See Chapter VI. *Measures Implemented External to the City of Dublin*).

(D) Specify measures or a group of measures, including performance standards that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level.

The City of Dublin CAP includes mandatory and enforceable measures that affect new development projects.

The CAP includes quantification of expected GHG emission reductions from each measure where substantial evidence is available (See *Chapter V. Emissions Reduction Measures and Policies*, and *Chapter VI. Measures Implemented by the State that Will Reduce Emissions Included in the City of Dublin Inventory*), including disclosure of calculation methods and assumptions (See *Appendix C. GHG Reduction Calculation Methods and Assumptions*). Quantification reflects annual GHG reductions and demonstrates how the GHG reduction target will be met. Together, the proposed CAP measures provide for a reduction of 21.01% reduction below BAU conditions, which exceeds the target of 20% by 1.01%.

The CAP also includes a program for implementation. It identifies which measures apply to different types of new development projects, discerning between voluntary and mandatory measures. It includes a mechanism for reviewing and determining if all applicable mandatory measures are being adequately applied to new development projects as part of the development review process. Identification of implementation steps and parties responsible for ensuring implementation of each action is also included.

(E) Monitor the Plan's Progress.

The City of Dublin will monitor results that are achieved by the various CAP programs and policies. Monitoring results is a critical step in verifying that the various policies and programs within the City's CAP are achieving the anticipated GHG emission reductions. The City will review the CAP on an annual basis to verify that the various reduction measures are being implemented appropriately. Additionally, the City will re-inventory its emissions every 5 years. The process of conducting a review will allow the City to demonstrate progress toward local emissions reduction targets and identify opportunities to integrate new or improved measures into the emissions reduction plan, including additional measures if necessary to meet the reduction target.

(F) Adopt the GHG Reduction Strategy in a public process following environmental review.

The City of Dublin's CAP will be adopted following a public hearing process and preparation of an Initial Study and Negative Declaration pursuant to CEQA.

II. Emissions Inventory

A. Reasoning, Methodology, & Model

The City of Dublin's emissions inventory was conducted by ICLEI in partnership with City staff. The purpose of the baseline emissions inventory is to determine the level of GHG emissions that the community emitted in its base year, 2005. The baseline inventory was completed in 2008 and approved by the Dublin City Council in October 2008.

ICLEI's Cities for Climate Protection (CCP) inventory methodology allows local governments to systematically estimate and track GHG emissions from the following sectors: transportation, residential, commercial/industrial and waste; and included energy- and waste-related activities at the community scale, as well as those resulting directly from municipal operations. The municipal operations inventory is a subset of the community inventory.

Once completed, these inventories provide the basis for creating an emissions forecast and reduction target and enable the emissions reductions associated with implemented and proposed measures to be quantified.

1. ICLEI's Emissions Analysis Software

To facilitate local government efforts to identify and reduce GHG emissions, ICLEI developed the Clean Air and Climate Protection (CACP) software package with Torrie Smith Associates. This software estimates emissions derived from energy consumption and waste generation within a community. The CACP software determines emissions using specific factors (or coefficients) according to the type of fuel used. Emissions are aggregated and reported in terms of CO_2e. Converting all emissions to CO_2e allows for the consideration of different GHGs in comparable terms. For example, methane is 21 times more powerful than CO_2 in its capacity to trap heat, so the model converts one ton of methane emissions to 21 tons of CO_2e.

The emissions coefficients and methodology employed by the software are consistent with national and international inventory standards established by the Intergovernmental Panel on Climate Change (IPCC) (*Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*), the *Guidelines for Voluntary Greenhouse Gas Reporting* and, for emissions generated from solid waste, EPA's Waste Reduction Model (WARM).

The CACP software has been and continues to be used by many local governments to reduce their GHG emissions. However, it is worth noting that, although the software provides the City of Dublin with a sophisticated and useful tool, calculating emissions from energy use with precision is difficult. The model depends on numerous assumptions, and it is limited by the quantity and quality of available data. With this in mind, it is useful to think of any specific number generated by the model as an approximation rather than an exact value.

2. Inventory Data Sources and Creation Process

An inventory of GHG emissions requires collecting information from a variety of sectors and sources. For community electricity and natural gas data, ICLEI consulted Pacific Gas & Electric Company (PG&E). The Metropolitan Transportation Commission (MTC), BAAQMD, and BART provided transportation data. Solid waste data was gathered from StopWaste.Org; Waste Management, Inc.; Amador Valley Industries; Republic Services, Inc.; and EPA. Dublin staff was instrumental in providing data on municipal operations.

This data was entered into the software to create a community emissions inventory and a municipal emissions inventory. The community inventory represents sources from the following sectors: transportation, residential, commercial/industrial and waste; and includes all the energy used and waste produced within Dublin and its contribution to GHG emissions. The municipal

inventory is a subset of the community inventory and includes emissions derived from internal government operations.

Two main reasons exist for completing separate emissions inventories for community and municipal operations. First, the municipal government is committed to action on reducing GHG emissions and has a higher degree of control over reducing its own emissions than those created by the community at large. Second, by proactively reducing emissions generated by its own activities, Dublin's city government takes a visible leadership role. This is important for inspiring local action in Dublin and in other communities.

Dublin's inventory is based on the year 2005. When calculating Dublin's emissions inventory, all energy consumed in the community was included. This means that, even though the electricity used by Dublin's residents is produced elsewhere, this energy and the emissions associated with it appear in Dublin's inventory.

B. Inventory Results

The results below represent the City of Dublin's completion of the first milestone of ICLEI's CCP campaign.

1. Community Emissions Inventory

Numerous items can be included in a community emissions inventory, as described above. This inventory includes sources from the following sectors:

- transportation,
- residential,
- commercial/industrial, and
- solid waste.

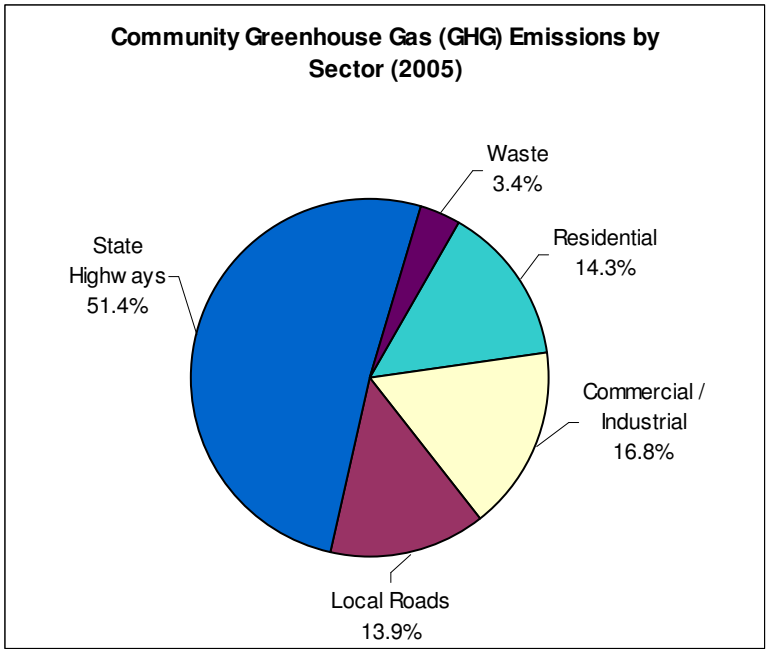


Figure 1 – *Community Greenhouse Gas Emissions by Sector*

Emissions by Sector

The Dublin community emitted approximately *357,211 MT CO_2e in the year 2005*. As visible in Figure 1 above and Table 2 below, vehicles on roads and state highways in Dublin are by far the largest source of Dublin's community emissions (65.3%). Emissions from the built environment (e.g., residential and commercial/industrial sectors) account collectively for almost one-third (31.1%) of community emissions. The rest of Dublin's emissions are from waste sent to landfills (3.5%) by Dublin residents and businesses. Water-related emissions are embedded in the energy data received from PG&E and therefore are a part of the overall community inventory analysis; however, these emissions are not included in the final reduction target analysis as emissions associated with the filtration and movement of water were not included in the City's baseline GHG Inventory as a disaggregated total.

Table 2 – *Community Greenhouse Gas Emissions by Sector (MT CO_2e)*

2005 Community Emissions by Sector	MT CO_2e	Percent of Total CO_2e	Energy Equivalent (MMBtu)
Residential	51,154	14.3%	886,617
Commercial/Industrial	60,183	16.8%	986,302
Local Roads	49,670	13.9%	670,383
State Highways	183,714	51.4%	2,479,544
Waste	12,490	3.5%	0
TOTAL	357,211	100%	5,022,846

Note: MT CO_2e = metric tons of carbon dioxide equivalent emissions; MMBtu = million British thermal units.

Transportation

Like most jurisdictions in the San Francisco Bay Area, the majority of Dublin's community emissions are from travel by motorized vehicles. This is also consistent with emission trends across the state, because ARB has shown that passenger vehicles make up the single largest source of emissions in California.[4] As Table 2 and Figure 1 show, over three-fifths (65.3%) of Dublin's estimated emissions came from travel on local roads and state highways. Overall, emissions from the transportation sector total 233,384 metric tons CO_2e.

Table 3 splits emissions from the transportation sector into travel on local roads and state highways. In 2005, MTC estimated that 90 million vehicle miles traveled (VMT) on roads in the city, emitting approximately 49,670 MT CO_2e, or 21.3% of total transportation emissions. The 332 million VMT along state highways in the city accounted for 183,714 MT CO_2e, or 78.7% of total transportation emissions.

VMT data for local roads in 2005 were obtained from the California Department of Transportation (Caltrans). Caltrans compiles and publishes statewide VMT data annually through the Highway Performance Monitoring System.[5] Caltrans obtains local road VMT data from regional transportation planning agencies and councils of governments across the state. For the San Francisco Bay Area, Caltrans obtains data from the Metropolitan Transportation Commission (MTC). MTC obtains data on local roads VMT either from the local governments within its jurisdiction or, if those data are unavailable, through a Caltrans model.

VMT data for state highways in Alameda County in 2005 were obtained from the same Caltrans report listed above. These data were translated to the jurisdiction level data through a geographic information system (GIS) analysis by ICLEI using an unpublished Caltrans dataset obtained from MTC. Through-trips were not removed from the analysis.

The number of vehicles on the road and the miles those vehicles travel can be reduced by making it easier for residents to use alternative modes of transportation, including walking, bicycling, and riding public transportation, including the existing and future BART stations in the Dublin/Pleasanton area. Please see Appendix A for additional detail regarding methods and emissions factors used to calculate transportation emissions.

[4] California State Greenhouse Gas Emissions Inventory available at http://www.arb.ca.gov/cc/inventory/data/tables/rpt_Inventory_IPCC_Sum_2007-11-19.pdf

[5] The 2005 report is available at http://www.dot.ca.gov/hq/tsip/hpms/hpmslibrary/hpmspdf/2005PRD.pdf.

Table 3 – *Transportation Greenhouse Gas Emissions by Road Type*

Transportation Emission Sources 2005	MT CO_2e	Percentage of Total CO_2e	Total Vehicle Miles Traveled
Local Roads	49,670	21.3%	89,680,500
State Highways	183,714	78.7%	331,701,050
TOTAL	**233,384**	**100%**	**421,381,550**

Note: MT CO_2e = metric tons of carbon dioxide equivalent emissions.

The Built Environment (Residential and Commercial/Industrial)

In 2005, 31.1% of total community emissions came from the built environment, which consists of the residential and commercial/industrial sectors. Collectively, these sectors consumed about 272.2 million kilowatt-hours (kWh) of electricity and 9.4 million therms of natural gas, resulting in approximately 111,337 MT CO_2e.

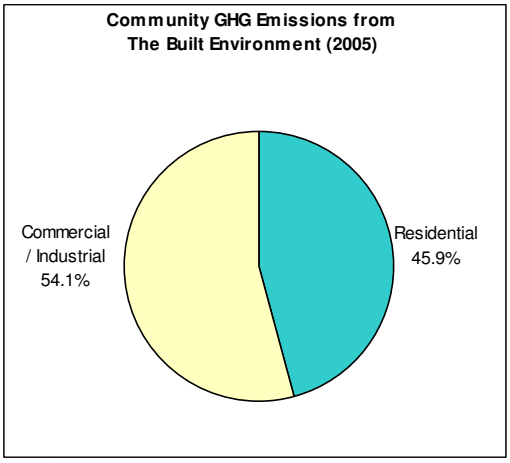


Figure 2 – *Built Environment Emissions*

Dublin receives electricity from PG&E. Appendix A includes the 2005 emissions coefficients for electricity provided by PG&E. The types of power sources that make up a utility's electricity generation mix can affect a community's GHG emissions. A coal-fired power plant, for example, releases 1.3 tons of CO_2e per megawatt-hour of electricity generated versus 0.7 tons for gas turbines and 0 tons for renewable sources such as solar, wind, or hydroelectric power. Dublin's emissions from the built environment are slightly more from the commercial/industrial sectors (54.1%); the residential sector makes up 45.9% of community stationary emissions (see Figure 2).

Residential

In 2005, Dublin's 40,700[6] residents consumed 91 million kWh of electricity, or about 6,987 kWh per household, and 5.8 million therms of natural gas, or about 442 therms per household[7]. When compared to most other Alameda County jurisdictions, energy consumption per household in Dublin was somewhat larger. While this is likely in part due to Dublin's inland location and more extreme temperatures, this suggests that the City may be able to find significant reductions in GHG emissions by targeting energy efficiency in residential buildings. Overall, residential energy consumption in Dublin resulted in 51,154 MT CO_2e emissions. Major residential energy uses include refrigeration, lighting, air conditioning and heating, and water heating.

Commercial/Industrial

In 2005, commercial/industrial buildings in Dublin consumed 181.2 million kWh of electricity and 3.7 million therms of natural gas, resulting in 60,183 MT CO_2e emitted into the atmosphere.

[6] Population and household estimates are from the Association of Bay Area Governments' *Projections 2005.*
[7] Ibid.

Emissions from industrial electricity and natural gas use, as well as Direct Access electricity use are included within the Industrial sector category. Industrial natural gas and electricity consumption data are reported within this sector under Public Utility Commission (PUC) confidentiality rules that prohibit the release of such data in certain cases.

Waste

In 2005, the City of Dublin sent approximately 41,779 tons of solid waste and 2,093 tons of alternative daily cover (ADC)[8] to a landfill, resulting in a total of about 12,490 MT CO_2e, or 3.5% of total GHG emissions (see Figure 1).

Emissions from the waste sector are an estimate of methane (CH_4) generation that will result from the anaerobic decomposition of the waste sent to a landfill from the community as a whole in the base year (2005). It is important to note that these emissions are not solely generated in the base year, but occur over the 100+ year time frame in which the waste generated in 2005 will decompose. This "frontloading" of future emissions allows for simplified accounting and accurate comparison of the emissions impacts of waste disposed in each year. Therefore, if the amount of waste sent to a landfill is significantly reduced in a future year, that year's emissions profile will reflect those reductions[9].

Some types of waste (e.g., paper, plant debris, food scraps) generate CH_4 within the anaerobic environment of a landfill and others do not (e.g., metal, glass). Characterizing the various components of the waste stream is important. Alameda County is unique among California counties because it conducted its own waste characterization study in the year 2000. The waste characterization study highlights the waste types that could be diverted from the waste stream. ICLEI used this study to determine the average composition of the waste stream for all Alameda County municipalities. The specific characterization of ADC tonnage was provided by the California Integrated Waste Management Board (CIWMB) via the Disposal Reporting System (DRS).

Most landfills in the Bay Area capture CH_4 emissions either to generate energy or for flaring (i.e., burning off). EPA estimates that 60–80%[10] of total CH_4 emissions are recovered at the landfills to which the City of Dublin sends its waste. Following the recommendation of the Alameda County Waste Management Authority, and keeping with general IPCC guidelines to use conservative estimations, ICLEI has adopted 60% as the methane recovery factor used in these calculations.

The tonnage of waste that is recycled, composted, or otherwise diverted from landfills is not a direct input into CACP. The effect of such programs, however, is reflected in the CACP software model as a reduction in the total tonnage of waste going to the landfill (therefore reducing the amount of methane produced at that landfill). The CACP model does not capture the emission reductions in "upstream" energy use from recycling (or any other emissions reduction practice) in the inventory. However, recycling and composting programs can reduce GHG emissions because manufacturing products with recycled materials avoids emissions from the energy that would have been used by extracting, transporting, and processing virgin materials.

[8] The California Integrated Waste Management Board defines ADC as "Alternative cover material other than earthen material placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging."

[9] The emissions reductions associated with decreasing the amount of waste being added to a landfill are real and few external variables usually exist that change those emission levels later; therefore, this practice of front-loading is considered an accurate way to count and report the emissions that will be generated over time.

[10] AP-42, Section 2.4, Municipal Solid Waste, page 2.4-6, http://www.epa.gov/ttn/chief/ap42/index.html

Table 4 – *Community Waste Composition and Emissions by Waste Type**

Waste Type	MT CO_2e	Percentage of Total CO_2e	Percent of Total Tonnage Disposed
Paper Products	7,430	59.5%	22.9%
Food Waste	2,229	17.9%	12.2%
Plant Debris	490	3.9%	4.7%
Wood/ Textiles	2,332	18.7%	25.4%
All Other Waste	0	0%	34.8%
TOTAL	12,481	100%	100%

Note: MT CO2e = metric tons of carbon dioxide equivalent emissions.
* Waste characterization study conducted by StopWaste.org for the year 2000. This total does not include alternative daily cover.

2. Municipal Emissions Inventory

The sources of emissions counted under the government's inventory are facilities and equipment owned and operated by the City. The government operations inventory includes sources from the following sectors:

- buildings,
- vehicle fleet,
- public lighting,
- water, and
- solid waste.

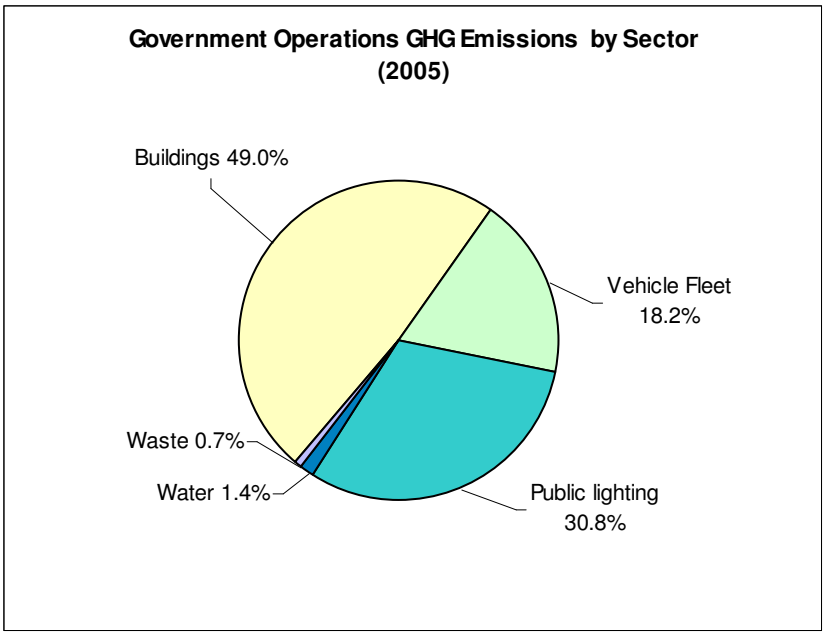


Figure 3 – *City Operations Greenhouse Gas Emissions by Sector*

Emissions by Sector

Government operations in the City of Dublin emitted approximately *1,573 MT CO_2e in 2005*.

As shown in Figure 3 and Table 5, the largest source of emissions from government operations is the City's buildings, which emit about half (49.0%) of the municipal GHGs. Public lighting is the second largest source of emissions, comprising about one-third (30.8%) of all emissions. Vehicle fleet emissions are also a large source of GHGs (18.2%), as are emissions from water pumps and irrigation (1.4%). Waste created through government operations makes up about 0.7% of the total remaining emissions.

Table 5 – *Government GHG Emissions by Sector*

Government Emissions 2005	MT CO2e	Percentage of Total CO_2e	Energy Equivalent (MMBtu)	Cost
Buildings	770	49.0%	12,787	$354,748
Vehicle Fleet	286	18.2%	3,681	$21,580*
Public Lighting	484	30.8%	7,377	$245,410
Water	22	1.4%	335	$16,775
Solid Waste	11	0.7%	0	$29,064
TOTAL	1,573	100%	24,180	$667,577

Note: MT CO_2e = metric tons of carbon dioxide equivalent emissions; MMBtu = million British thermal units.
* This total includes only the Fire Department vehicles. Fuel costs were unavailable for vehicles from all other departments.

Energy-Related Costs

In addition to generating estimates on emissions per sector, ICLEI has calculated the basic energy costs of various government operations. During 2005, the Dublin municipal government spent approximately $668,000[11] on energy (electricity, natural gas, gasoline, and diesel) for its buildings, public lighting, and vehicles. The large majority of costs were for energy used by City facilities, with about $355,000 spent on natural gas and electricity. Energy for public lighting was a relatively large cost as well at around $245,000. Beyond reducing harmful GHGs, any future reductions in municipal energy use have the potential to reduce these costs, enabling Dublin to reallocate limited funds toward other municipal services.

Municipal Buildings/Facilities

In 2005, Dublin municipal buildings and other facilities consumed about 2.2 million kWh of electricity and 54,000 therms of natural gas, which and resulted in 770 MT CO_2e emissions (approximately 49.0% of total municipal emissions).[12]

Table 6 shows energy consumption and emissions by facility groups. In 2005, the Dublin Civic Center was the largest municipal energy consumer, using 55% of all municipal electricity and 48% of all municipal natural gas. Energy consumption from the Dublin Civic Center resulted in 405 MT CO_2e emissions, or 52.6% of all municipal facility emissions. The Dublin Swim Center was also a large source of emissions, emitting 129 MT CO_2e, or 16.8% of all municipal facility emissions. City fire stations, the Emerald Glen Park and Preschool, and recreation facilities were also large GHG sources, collectively emitting approximately 29% of all municipal emissions. City parks and other energy consumers made up only a small portion of municipal emissions.

[11] This total includes only the Fire Department vehicles. Fuel costs were unavailable for vehicles from all other departments.
[12] Accounts attributed to the Housing Authority of the County of Alameda (HACA) have been removed from municipal operations because of a lack of jurisdiction. Rather, consumption by residents in these facilities has been counted in the community analysis of the residential sector.

Table 6 – *Energy Consumption and Greenhouse Gas Emissions from Facilities*

Facility[1]	MT CO_2e	Percentage of Total CO_2e	Electricity Consumption (kWh)	Natural Gas Consumption (therms)	Energy Equivalent (MMBtu)	Cost
Civic Center	405	52.6%	1,186,080	26,231	6,671	$187,065
Swim Center	129	16.8%	187,840	16,352	2,276	$42,476
Fire Department	88	11.4%	183,920	8,679	1,496	$37,454
Emerald Glen Park and Preschool	79	10.3%	353,477	0	1,206	$45,008
Recreation Facilities/Centers[2]	55	7.1%	173,952	3,031	898	$32,723
Parks and Other[3]	14	1.8%	70,339	0	240	$10,022
TOTAL	**770**	**100%**	**2,155,608**	**54,293**	**12,787**	**$354,748**

Note: MT CO_2e = metric tons of carbon dioxide equivalent emissions; kWh = kilowatt-hours; MMBtu = million British thermal units.

[1]A few individual buildings are highlighted because of their large emissions.

[2]Recreation Facilities/Centers includes the Dublin Heritage Center, Dublin Senior Center, and Shannon Community Center and Park.

[3]Parks and Other includes Dolan Park, Kolb Park, Mape Memorial Park, Ted Fairfield Park, and a storage yard and trash compactor.

City Vehicle Fleet and Mobile Equipment

As shown in Figure 3, the City's vehicle fleet was the third largest source of municipal emissions in 2005, emitting 18.2% of all municipal emissions. The municipal fleet includes all vehicles owned and operated by the City of Dublin. For this inventory, fuel consumption was reported for only the Fire Department fleet, or 13 out of 51 vehicles in the City fleet.

In 2005, vehicles included in the inventory emitted about 286 MT CO_2e. Table 7 and Figure 4 detail emissions by department. As stated above, where fuel consumption was not reported, VMT and emissions per vehicle mile were used to estimate CO_2e emissions[13].

Table 7 – *2005 City Vehicle Fleet Greenhouse Gas Emissions and Fuel Consumption*

Department	MT CO_2e	Percentage of Total CO_2e	Gasoline Consumption (gal)	Diesel Consumption (gal)	Energy Equivalent (MMBtu)
Police Department *	177	61.9%	n/a	n/a	2,285
Fire Department	78	27.3%	980	7,113	991
Public Works Department *	28	9.8%	n/a	n/a	365
Parks Department *	3	1.0%	n/a	n/a	40
TOTAL	**286**	**100%**	**980**	**7,113**	**3,681**

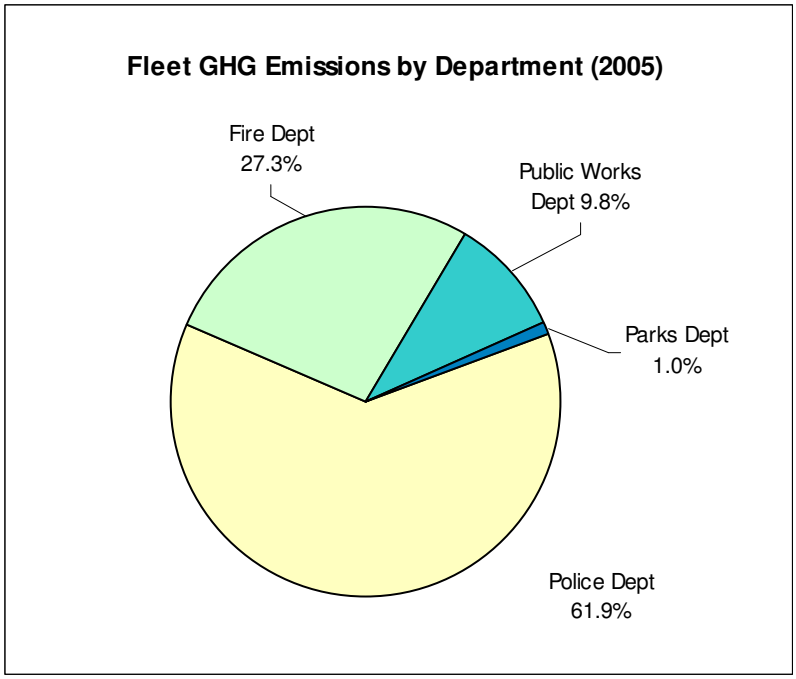
Note: MT CO_2e = million metric tons of carbon dioxide equivalent emissions; gal = gallon; n/a = not available; MMBtu = million British thermal units.

*Fuel consumption was unavailable for these departments. Odometer readings were used to estimate fuel consumption for the purposes of the estimate.

[13] Emissions per VMT = fuel efficiency (i.e. miles per U.S. gallon) x emissions per unit of fuel (the fuel type factor).

Public Lighting

Figure 4 – *City Fleet Greenhouse Gas Emissions by Sector*



Public lighting includes all streetlights and traffic signals in the City. In 2005, public lighting consumed about 2.2 million kWh of electricity at a cost of $245,410. This energy consumption resulted in 484 metric tons of CO_2e emissions. Table 8 breaks down energy use and emissions from public lighting by type.

Over all categories of energy, across all sectors of municipal operation, public lighting generated just under a third (30.8%) of all emissions (Figure 3), representing the second largest source of municipal emissions. This percentage is unusually high because streetlights make up a much larger proportion of overall electricity consumption from government operations in Dublin than in most other local governments. Much of this consumption is caused by new streetlights in several new, large subdivisions. This suggests that the City may be able to effectively reduce emissions by reducing the amount of electricity the streetlights use, which could be accomplished by reducing hours of operation and/or the number of streetlights or by improving the technologies used.

Table 8 – *2005 Public Lighting Greenhouse Gas Emissions and Energy Use*

Lighting Type	MT CO_2e	Percentage of Total CO_2e	Electricity Consumption (kWh)	Energy Equivalent (MMBtu)	Cost
Streetlights	427	88.2%	1,907,977	6,512	$207,171
Traffic Signals	57	11.8%	253,497	865	$38,239
TOTAL	**484**	**100%**	**2,161,474**	**7,377**	**$245,410**

Note: MT CO_2e = metric tons of carbon dioxide equivalent emissions; kWh = kilowatt-hours; MMBtu = million British thermal units.

Water

The water category includes all electricity used for pumping water and irrigation control. In 2005, water infrastructure consumed about 98,086 kWh of electricity, which cost the City $16,775 and resulted in 22 metric tons of CO_2e emissions. The data were not detailed further. Total energy use and emissions from water pumps and irrigation generated about 1.4% of the total municipal emissions (Figure 3).

Solid Waste

Solid waste generated by City-owned facilities and infrastructure produced an estimated 0.7% (Figure 3) of the total emissions from government operations. Like the community analysis, these emissions are an estimate of future CH_4 generation over the full, multiyear decomposition period of the waste generated in the year 2005.

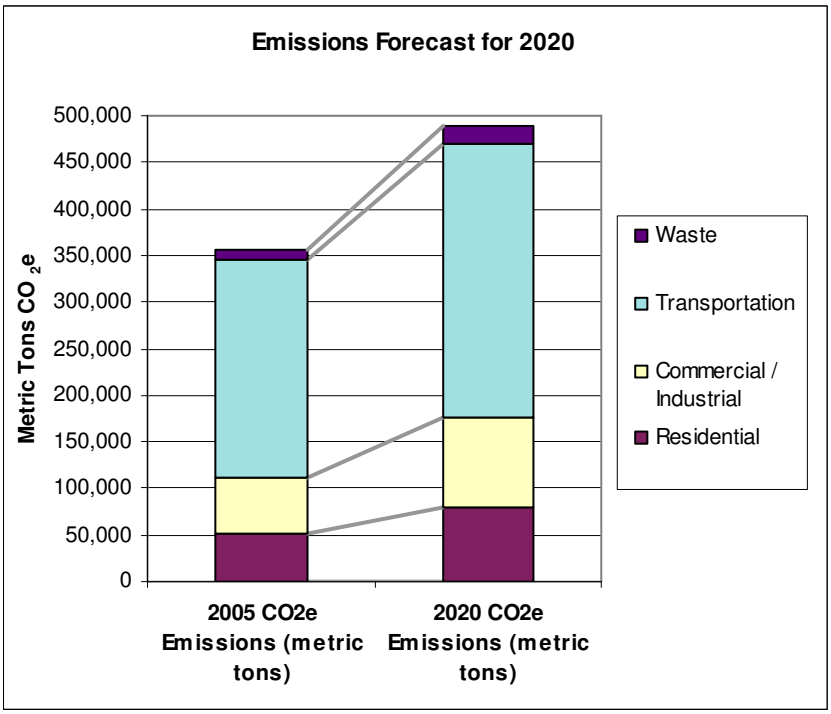
In 2005, the City of Dublin sent approximately 32.5 tons of solid waste to landfill, resulting in 11 metric tons of CO_2e.

In the absence of a centralized disposal record like the CIWMB Disposal Reporting System, waste generation figures from government operations and the characterization of government waste were estimated by City staff. Additionally, the final emissions number generated by the CACP software used the 60% CH_4 recovery factor discussed above.

III. Forecast for Greenhouse Gas Emissions

Under a business-as-usual scenario, Dublin's GHG emissions would grow over the next 15 years by approximately 31.9%, from 357,211 to 471,205 MT CO_2e. This is a considerable growth rate when compared to other Alameda County jurisdictions and underscores Dublin's predicted jobs and population boom in the next decade. This also underscores the importance of acting to reduce emissions now, because policies Dublin enacts now will affect future residents and businesses.

Figure 5 – *Community Emissions Forecast*



To illustrate the potential emissions growth based on projected trends in energy use, driving habits, job growth, and population growth from the baseline year going forward, ICLEI conducted an emissions forecast for the year 2020. Figure 5 and Table 9 show the results of the forecast. A variety of reports and data were used to create the emissions forecast.

Residential Forecast Methodology

For the residential sector, ICLEI calculated the compounded annual population growth rate[14] between 2005 and 2020 using population projections from the Association of Bay Area Government's (ABAG's) *Projections 2009*. The resulting growth rate (2.850%) was used to estimate average annual compound growth in energy demand (see Table 9). ABAG estimates that Dublin's population was 41,200 in 2005, and ICLEI's calculations predict a population of 62,800 in 2020, an overall population increase of 52%.

Commercial/Industrial Forecast Methodology

Analysis contained within *California Energy Demand 2008-2018: Staff Revised Forecast,*[15] a report by CEC, shows that commercial floor space and the number of jobs have closely correlated with the growth in energy use in the commercial sector. Using job growth projections for Dublin from ABAG's *Projections 2009*, the compounded annual growth in energy use in the commercial sector between 2005 and 2020 was calculated to be 2.087% (see Table 9). Dublin's job growth between 2005 and 2020 is projected to be 36%, increasing from 19,520 to 26,610 jobs.

[14] Compounded annual growth rate = ((2020 population/2005 population)^(1/15))-1
[15] Available at http://www.energy.ca.gov/2007publications/CEC-200-2007-015/CEC-200-2007-015-SF2.PDF.

Transportation Forecast Methodology

In their report, *Transportation Energy Forecasts for the 2007 Integrated Energy Policy Report*, CEC projects that on-road VMT would increase at an annual rate of 1.51% per year through 2020 (see Table 9).[16] This is the number used to estimate emissions growth in the transportation sector for Dublin. The federal Corporate Average Fuel Economy standards and California's approved tailpipe emission standards could reduce the demand for transportation fuel in Dublin. Regardless of future changes in the composition of vehicles on the road as a result of federal or state rulemaking, emissions from the transportation sector will continue to be largely determined by VMT growth.

Waste Forecast Methodology

As with the residential sector, population is the primary determinate for growth of emissions in the waste sector. Therefore, the compounded annual population growth rate for 2005 to 2020, which is 2.850% (as calculated from ABAG population projections), was used to estimate future emissions in the waste sector (see Table 9).

Table 9 – *Community Greenhouse Gas Emissions Growth Projections by Sector*

Community Emissions Growth Forecast by Sector	2005 MT CO_2e Emissions	2020 MT CO_2e Emissions	Annual Growth Rate	Percent Change (2005 - 2020)
Residential	51,154	77,973	2.850%	52.4%
Commercial/Industrial	60,183	82,043	2.087%	36.3%
Transportation	233,384	292,151	1.509%	25.2%
Waste	12,490	19,038	2.850%	52.4%
TOTAL	**357,211**	**471,205**	**–**	**31.9%**

Note: MT CO_2e = metric tons of carbon dioxide equivalent emissions.

While the community emissions growth forecast is based on known per capita energy consumption, workforce expansion, and population growth projections, the municipal operations forecast is based on the expansion of City services or infrastructure. Estimating the growth of City infrastructure or services was not within the scope of this project, and, therefore, this document does not include a similar forecast of government operations emissions, beyond that which is included within the community forecast. The CAP includes the various municipal measures that the City has in place to reduce municipal GHG emissions.

[16] Report available at http://www.energy.ca.gov/2007publications/CEC-600-2007-009/CEC-600-2007-009-SF.PDF. The compounded annual growth rate for 2005-2020 is calculated from Table 9.. In light of fuel cost increases, the calculation assumes a scenario in which fuel costs would be high.

IV. Greenhouse Gas Emissions Reduction Target

A reduction target provides a tangible goal for Dublin's efforts to reduce GHG emissions. The emissions reduction target for the community aims to decrease emissions by 20% below a business-as-usual scenario by 2020.

Many factors were considered when selecting Dublin's reduction target. The City strove to choose a target that is both aggressive and achievable given local circumstances.

Local factors considered in selecting the target percentage to reduce GHG emissions included estimation of the effects of implemented and planned programs and policies, an approximate assessment of future opportunities to reduce emissions, targets adopted by peer communities, BAAQMD guidance and CEQA significance thresholds, and emission reductions expected to be achieved by state-level policy under AB 32 and other regulations. The City of Dublin is adopting a community emissions reduction target of 20% below a business-as-usual scenario by 2020. To reach this target, the Dublin community must reduce annual emissions by about 95,000 MT CO_2e from baseline 2005 levels.

Table 10 – *Dublin Communitywide Emissions Summary*

Dublin Communitywide Emissions Summary	
Base year	**2005**
Base year MT CO_2e emissions	357,211
Target year	**2020**
BAU projection MT CO_2e emissions	471,205
Percent CO_2e reduction by target year relative to base year (% below BAU)	20%
Impact of Emission Reduction Goal (MT CO_2e/yr)	94,241
Forecasted Emissions with Reduction Measures (MT CO_2e/yr)	376,964

Note: MT CO_2e = metric tons of carbon dioxide equivalent emissions; BAU = business-as-usual
Sources: ICLEI CACP model output, summarized by AECOM 2010

Further, the City of Dublin's CAP is designed to meet or exceed the goals of AB 32. To delineate the City's commitment to the goals of AB32, the City's CAP employs the BAAQMD's GHG efficiency based metric of 6.6 MT CO_2e per service population per year, where service population is the summation of population and the number of jobs within the City. As displayed in Table 11 below, the City of Dublin's efficiency metric is well below the established threshold in both the Base Year 2005 and Forecast Year 2020. Using the per capita measures of 5.88 for 2005 and 4.22 for 2020, the City of Dublin's reduction goal equates to a 28% decrease in GHG emissions between the Base Year and Forecast Year. Thus, the City will be growing significantly over the 15-year period covered by the CAP, but during this same time, the City's GHG emissions will be decreasing significantly on a per individual basis, which is not clearly visible when simply inspecting the BAU scenario.

Table 11 – *Dublin Communitywide Emissions Analysis*

CAP Reduction Goal Analysis		
Item	**Year**	**Emissions (MT CO2e)**
GHG Emissions Inventory	2005	357,211
GHG Emissions BAU Forecast	2020	471,205
GHG Emissions Projection with Reduction Goal	2020	376,964
Item	**Year**	**Persons**
Service Population (SP)	2005	60,720
Service Population (SP)	2020	89,410
*ABAG 2009 Population Projections		
Item	**Year**	**(MT CO2e)/SP**
GHG Efficiency Metric	2005	5.88
GHG Efficiency BAU Metric	2020	5.27
GHG Efficiency Goal Metric	2020	4.22

V. Emissions Reduction Measures and Policies

At both the community scale and within municipal operations, the City of Dublin has undertaken a number of programs, policies, and projects that result in reduced GHG emissions. Not only do these measures reduce GHG emissions, they also have the co-benefit of achieving other City policy goals, such as reducing local air pollution, reducing traffic, improving public health, increasing energy efficiency and conservation, reducing solid waste and improving solid waste management. Ultimately, the goal of Dublin's CAP is to build on existing planning and implementation efforts and integrate them into the broader task of reducing the GHGs emitted within the community. In addition, the CAP intends to encourage action by citizens, jurisdictional partners and business members of the community as they will also have an integral role in reducing emissions through programs of their own as well as the programs listed below. The City's Climate Action Plan is not intended to be closed after its initial adoption. The City expects to continue to add additional programs, practices and policies that will contribute to GHG reductions for many years to come. As these programs, practices and policies are developed and implemented, they will be folded into the City's Climate Action Plan.

The City of Dublin has undertaken and continues to implement numerous measures to reduce GHGs since its baseline emissions were determined for 2005. The various GHG reduction measures are organized into three categories: transportation/land use, energy (which includes both energy efficiency and renewable energy), and waste management[17]. These categories follow the major sources of emissions found in the GHG emissions inventory (described in Section IIB). Where possible, anticipated emission reductions have been quantified based on substantial evidence. Within each measure outlined below, the City has attempted to explain its reasoning behind the measures inclusion as well as define the assumptions used in deriving the quantified reduction value. Additional detail and references to substantial evidence supporting quantified GHG reductions are provided in Appendix C. Existing methods for quantifying GHG emission reduction measure performance include both top-down and bottom-up calculations. Both methods are used to quantify GHG emission reductions in the CAP.

A top-down calculation begins with the communitywide GHG emissions inventory. A recommended emission reduction measure (e.g., energy efficiency) targets a certain emission sector (e.g., natural gas, electricity), emissions sub-sector (e.g. residential, commercial) and portion thereof (e.g. space heating, water heating, air conditioning). Thus, the communitywide GHG emission inventory is scaled according to the applicability of the measure being evaluated. Assumptions for participation rates (i.e. the portion of the community that would participate in a program [e.g., % of residential units that would implement energy-efficiency improvements]) and efficiency levels (i.e. the level of efficiency that would be achieved by the program [e.g. % energy efficiency improvement above baseline conditions]) are made. These participation and efficiency assumptions are then multiplied by the relevant portion of the communitywide inventory to derive amount (in MT CO_2e) of emissions reduced.

A bottom-up approach to quantifying GHG emissions starts with a GHG reduction measure (e.g., installation of photovoltaic panels). If the measure is assumed to reduce electricity demand by a certain number of kilowatt-hours, this can be converted to GHG emission reductions using an emission factor for electricity generation. However, it is critical that the assumed emission factor be the same factor that was used to calculate the GHG emission inventory.

[17] The term "waste management" includes waste reduction, recycling, composting, and final disposal activities.

A. Communitywide Measures

The measures outlined in this section represent significant reductions of GHG emissions in the community. They are organized by sector and outlined below.

A.1 Transportation and Land Use Measures

Broadly, there are three main ways to reduce GHG emissions from the transportation sector. One way is to implement policies that reduce dependence on personal motor vehicles and encourage alternative modes of transportation, such as public transit, cycling, and walking. Another way is to use vehicles that release fewer GHGs, such as hybrids, more fuel-efficient vehicles, and vehicles that run on alternative fuels. A final way is to encourage "smart growth" (i.e., policies that promote efficient land use development). Smart growth reduces the need to travel long distances, facilitates transit and other nonautomotive travel, increases the availability of affordable housing, employs existing infrastructure capacity, promotes social equity, helps protect natural assets, and maintains and sustains existing communities.

Vehicles on roads and state highways in Dublin are by far the largest source of Dublin's community emissions. In 2005, 65.3% of the community's GHG emissions were from the transportation sector.

A.1.1 Transit-Oriented Development

Context – In November 2002, the City of Dublin adopted a general plan amendment, specific plan amendment, and zoning for the Dublin Transit Center, located near the existing Dublin/Pleasanton BART station. The plan allows for the eventual construction of 1,800 high-density residential units, 1.7 million square feet of campus office uses, 70,000 square feet of ancillary commercial uses, an 8.7-acre park, and a new BART parking structure. None of the projects located in the Transit Center were constructed prior to 2005 and therefore, are not included in the emissions inventory. As of 2009, six-hundred seventy-four (674) units have been constructed.

The City of Dublin also adopted a West Dublin BART Specific Plan in December 2000, which was subsequently amended in November 2007. The West Dublin BART area, under the concept in the Specific Plan, is intended to be a high-intensity mixed-use area, capitalizing on regional transit linkages provided by both the BART line and supported by nearby freeways, including Interstate 580 and Interstate 680. Within the West Dublin BART area, a mixture of low-rise and mid-rise buildings consisting of residences, offices, specialty retail, lodging, restaurant and similar uses are planned that are consistent with a transit-oriented area. Consistent with the West Dublin BART Specific Plan, the City of Dublin has approved high-density residential development, a hotel, and office space at the West Dublin BART Station. The West Dublin BART Station is currently under construction and is anticipated to be completed in 2011. The 309-unit Windstar project has been approved near the West Dublin BART Station. Additionally, a hotel and ancillary retail/restaurant space have been approved in concept. The nearby AMB project has also been approved and, once constructed, will include 308 high-density residential units and a 150,000-square-foot office complex.

In July 2009, Fehr & Peers Transportation Consultants reviewed data from a variety of sources to develop a likely range of vehicle trip reductions for transit-oriented development (TOD) adjacent to the BART stations in Dublin (See Appendix B). Research indicates that developments adjacent to transit services, such as BART, can expect to experience a reduction in vehicle trips, especially

for commute trips. Further, vehicle trip reductions may be possible if residential locations are within walking distance of retail/service amenities or an employment center.

TOD residents tend to have a higher transit mode share than the remainder of the city because they tend to have fewer cars per person, are more likely to be single and without children, and cite location to transit as a factor for choosing the TOD residential location.

Emission Reductions – Based on their research, Fehr & Peers identified a reduction in vehicle trips of 25% for multi-family residential developments located in a mixed-use environment within a barrier-free, half-mile walk of a BART station. Dublin's planned TOD developments, in conjunction with the City's policies that promote high-density development (see Measure A.1.2) and mixed-use development (see Measure A.1.3), are estimated to result in a reduction of **4,357 MT CO_2e/year** (0.93% reduction relative to 2020 BAU).

A.1.2 High-Density Development

Context – The City of Dublin has a high-density residential land use designation, which allows 25.1+ dwelling units per acre. These high-density developments are located near the existing Dublin/Pleasanton BART station and along Dublin Boulevard. High-density development has been approved near the future West Dublin BART Station. Additionally, Area G of Dublin Ranch includes approximately 1,400 medium-high and high density residential units. The high density residential land use designation was included in the City's original General Plan, which was adopted in 1985. While this policy did exist prior to 2005, the total impact of the policy was not reflected in the 2005 inventory. For high-density housing, the only development projects included in the reduction calculation are those that were constructed after 2005.

Emission Reductions – Emission reductions for this measure are included in Measure A.1.1.

A.1.3 Mixed-Use Development

Context – Several areas in the City allow mixed-use development. The mixed-use land use designation encourages the combination of medium- to medium-high-density residential housing and at least one nonresidential use, such as office or retail. The mixed-use land use designation was added to the City's General Plan in 2004. For mixed-use projects, the only development projects included in the reduction calculation are those that were constructed after 2005. Several projects have been approved in the City that include a mixed-use component, such as the Transit Center, Groves, Tralee, Jordan Ranch and San Ramon Village. Additionally, the City is currently working on several other projects that will also include a mixed-use component.

Emission Reductions – Emission reductions for this measure are included in Measure A.1.1.

A.1.4 Bicycle Parking Requirements

Context – Bicycle parking requirements are implemented during the development review process. Under the City's Off-Street Parking and Loading Regulations, parking lots with 20 or more spaces in nonresidential zoning districts are required to provide one bicycle parking space in a bicycle rack for each 40 vehicular parking spaces. Additionally, requirements exist for bicycle parking in multi-family residential complexes. The availability of bike racks throughout the City supports the use of the City's bike lanes, and is an essential part of encouraging individuals to choose biking over driving.

Emission Reductions – It is estimated that the City's bike parking requirement will result in a reduction of **1,826 MT CO_2e/year** (0.39% reduction relative to 2020 BAU).

A.1.5 Streetscape Master Plan

Context – In June 2005, the Dublin City Council adopted a resolution approving a streetscape master plan. The goals of the streetscape plan are to better coordinate streetscape design throughout the community, clearly delineate public and private responsibilities for improving aesthetics, and provide a mechanism for promoting capital improvement projects with built-in streetscape improvements. Additionally, the Zoning Ordinance has requirements for planting trees in parking lots (minimum of one tree for every four parking spaces).

Emission Reductions – Policies that promote trees within the community, such as those in the streetscape master plan and the Zoning Ordinance, play a valuable role in reducing GHGs within the community because trees can capture and store CO_2. Furthermore, more attractive and better shaded streets create a more conducive environment for walking, bicycling and transit use, which can shift trips away from single-occupancy vehicles. Implementation of the streetscape master plan is estimated to result in a 1% mode shift away from single-occupancy vehicles, leading to a reduction of **2,922 MT CO_2e/year** (0.62% reduction relative to 2020 BAU).

A.1.6 Multi-Modal Map

Context – In June 2009, the City adopted a multi-modal map, which is a comprehensive tool to relay transportation opportunities within a specific location. The function of the multi-modal map is to show the various methods of transportation within the City, including pedestrian, vehicle, and bicycle trips as well as connections to other cities. The Multi-Modal Map is currently posted on the City's website. Additionally, the City will explore opportunities to distribute the map to residents and businesses to promote alternative modes of transportation in Dublin.

Emission Reductions – The multi-modal map is estimated to lead to more informed alternative transportation users. Assuming that implementation and distribution of the multi-modal map would result in a mode shift of 1% away from single-occupancy vehicles, this would result in a reduction of **2,922 MT CO_2e/year** (0.62% reduction relative to 2020 BAU).

A.1.7 Recharging Stations for Electric and Plug In–Hybrid Vehicles at the Dublin Library

Context – The Dublin Library, which was constructed in 2005, was designed to include recharging stations to be utilized by community members for electric and plug in–hybrid vehicles. The City also has parking spaces designated for low-emission vehicles at the Shannon Community Center.

Emission Reductions – This measure will result in reductions of GHG emissions in the City. However, the amount of reductions anticipated from electric plug in-hybrid vehicles are difficult to quantify, so an estimated amount has not been included in the Plan. Therefore, GHG emission reductions from this measure would result in additional reductions not included in the quantified reductions under this Plan.

A.1.8 General Plan Community Design and Sustainability Element

Context – In September 2008, the City of Dublin adopted a Community Design and Sustainability Element. The Community Design and Sustainability Element establishes design principles, policies, and implementation measures to enhance the livability of Dublin and

encourages a high level of quality design that supports sustainability. The Community Design and Sustainability Element applies to new development and redevelopment throughout the City.

Emission Reductions – This measure will result in reductions of GHG emissions in the City. However, the amount of reductions anticipated from the Community Design and Sustainability Element policies and programs are difficult to quantify, so an estimated amount has not been included in the Plan. Therefore, GHG emission reductions from this measure would result in additional reductions not included in the quantified reductions under this Plan.

A.1.9 Work with the Livermore Amador Valley Transit Authority to Improve Transit

Context – The City works with the Livermore Amador Valley Transit Authority (LAVTA) to provide improved transit opportunities in the community. As part of the review process for proposed development projects, the City and project proponents work with LAVTA on planning future bus stop locations and extending service routes.

LAVTA's Bus Rapid Transit, or RAPID, project is underway. RAPID, scheduled to begin operations in early 2011, will run a similar route to one of LAVTA's existing routes (Route 10) but will offer more direct and efficient service between Livermore, the East Dublin/Pleasanton BART station and the Stoneridge Mall in Pleasanton. Efficiencies will be achieved by following a shorter route, using advanced technology to minimize delays at traffic signals, and increasing spacing between stops. The buses will run more frequently, thus reducing passenger waiting time. Within Dublin, RAPID will run along Dublin Boulevard between San Ramon road and Fallon Road and will also pull into the BART station.

Emission Reductions – The City will continue to work with LAFTA to improve transit within the community, which is estimated to result in a reduction of **1,461 MT CO_2e/year** (0.31% reduction relative to 2020 BAU).

A.1.10 Bikeways Master Plan

Context – In July 2007, the City of Dublin adopted a Bikeways Master Plan. Policies in the plan include the continued development of successful bicycle and pedestrian trail corridors, improved bicycle access to parks and open space areas, improved bicycle lanes and/or routes on several key cross-city corridors, bikeways on key freeway crossings, the development of education and enforcement programs, and improvements to the City's Bicycle Parking Ordinance.

The City of Dublin recognizes the many benefits of creating additional bicycle routes and improving existing routes. Pedal power is a clean source of energy that does not produce GHG emissions; however, lack of adequate bike infrastructure is a major barrier to cyclists. Providing and promoting a convenient and safe bike infrastructure serves to reduce trips by motor vehicles. Bicycles are especially appropriate in reducing the number of short trips (up to 5 miles), which constitute more than half of all driving. Shifting trips from cars to bikes also reduces street traffic. An investment in bike infrastructure is also an investment in public health, because cycling is an excellent mode of physical activity. A fit community has lower health care costs.

Emission Reductions – Bikeways within the City of Dublin total 21.4 miles. The Bikeways Master Plan proposes 55.2 miles of Class I, II, or III bike lanes. The current mode share of bicycles within the City is 0.3% and the proposed Bikeways Master Plan is designed to result in a bicycle mode share of 1.5%. Construction and intended use of the bikeways outlined in the Bikeways Master Plan would result in a reduction of **3,506 MT CO_2e/year** (0.74% reduction relative to 2020 BAU).

A.2 Energy Measures

Increasing energy efficiency and renewable energy throughout the community has immense potential to both reduce GHG emissions and save money. The energy consumed to heat, light, and power buildings within the community is a direct source of GHG emissions. The reduction of GHG emissions from building energy use can be achieved in a variety of ways, which include optimizing energy efficiency in new construction; retrofitting existing buildings to reduce energy consumption; promoting energy and water conservation and efficiency; and advancing the use of renewable energy. Other methods to increase community energy efficiency include subsidizing energy management services such as energy audits for residents and businesses and ensuring that developers and building contractors are trained on energy conservation and efficiency.

Available sources of renewable energy include solar, wind, biomass, and geothermal energy. Hydrogen fuel cells and tidal current power are renewable energy sources that hold promise but require further research and innovation before they are as practical and possible to implement as other options. Renewable energy sources offer the potential for a clean, decentralized energy source that can reduce Dublin's GHG emissions.

A.2.1 Green Building Ordinance

Context – In 2009, the City passed a Green Building Ordinance (DMC Chapter 7.94) requiring residential projects over 20 units to reach 50 points on the GreenPoint Rating system. Alternatively, LEED for Homes is approved in the ordinance. Other types of rating systems may be approved by the City's Green Building Official on a case-by-case basis. The majority of residential projects within the City are subject to the Green Building Ordinance. There are little to no planned residential projects within the City that are 20 units or less.

GreenPoint Rated is a green building program administered by the nonprofit organization Build It Green. GreenPoint Rated was conceived of and developed with assistance from StopWaste.Org. The GreenPointRated guidelines and rating system, begun in 2000, has grown rapidly and is becoming a standard for the construction of green residential homes and major renovation projects throughout California. The GreenPointRated system is comprised of five related categories: energy efficiency, resource conservation, indoor air quality, water conservation, and community, all of which are important to the practice of green building. To meet the GreenPointRated criteria a home must obtain at least 50 total points on the GreenPointRated scale as well as meet certain minimum point thresholds within each of the aforementioned five categories. Homes are evaluated by a third-party professional rater. Once a residence is verified to meet the criteria for a GreenPointRated home, Build It Green issues a certificate to the builder, which can be used for marketing purposes.

The Fiorano neighborhood within the Positano development in Eastern Dublin is currently under construction and is subject to the City's Green Building Ordinance. The Fiorano development includes 43 single-family homes. During the plan check process, the developer agreed to a minimum of 66 points on the GreenPoint Rating System. To date, 12 homes have been completed and the actual points achieved for these homes range from 98 – 120 points.

Two recent projects have been approved that are subject to the Green Building Ordinance. The first project, Sorrento East includes 581 medium density units within 6 neighborhoods. During the Site Development Review process, the developer demonstrated that the project would achieve

the minimum 50 points on the GreenPoint Rating system. The average of the 6 neighborhoods is 64 points. The second project, 780 units at Jordan Ranch, includes both attached and detached units within 6 neighborhoods. During the Site Development Review process, the developer demonstrated that the project would achieve the minimum 50 points on the GreenPoint Rating system. The average of the 6 neighborhoods is 59 points. Sorrento East and Jordan Ranch are both located in Eastern Dublin.

Emission Reductions – GreenPoint Rated homes achieve GHG emissions reductions from, among other practices, solid waste management measures such as Bay-Friendly Landscaping and recycling of construction and demolition debris (C&D); increased energy efficiency; use of renewable energy; and conservation of water both inside and outside the home. Implementation of the Green Building Ordinance requiring at least 50 points on the GreenPoint Rating system for projects over 20 units is estimated to result in a reduction of **15,287 MT CO_2e/year** (3.24% reduction relative to 2020 BAU).

A.2.2 Energy Upgrade California

Context – The StopWaste.org initiated Energy Upgrade California program will establish countywide building retrofit measures and specifications for energy efficiency, water and resource conservation, and indoor air quality and health. The program is intended to provide a standardized countywide approach that identifies specific green retrofits to improve existing buildings. StopWaste.org has demonstrated leadership at the countywide level on many programs including waste diversion, green building, and bay friendly landscaping. The Energy Upgrade California program would include these existing programs and further expand them to include energy efficiency, resource conservation, and indoor air quality and heath. In addition, the Energy Upgrade California program intends to:

- develop a technical advisory group;
- conduct outreach at the countywide level;
- provide training of contractors;
- provide verification and tracking of projects;
- leverage funding for project implementation (stimulus funds, other grants, municipal contributions); and
- provide economies of scale and scope for all jurisdictions within the County.

As of January 2010, the Energy Upgrade California program for single-family residential buildings is being developed and additional programs for commercial, multi-family, and other buildings will be developed based on funding availability. The budget for the Energy Upgrade California project does not include funds for installation of the green retrofit measures, but StopWaste.Org suggests that existing redevelopment funds or other funding streams from the federal stimulus can be used to implement the Energy Upgrade California.

StopWaste.Org notes that buildings account for 23% of Statewide GHG emissions, and existing buildings represent the majority of the State's building stock; therefore, the California Public Utilities Commission has a goal of improving the energy performance of existing buildings by 40% by 2020. The level of emissions from existing buildings in Dublin is higher than the State level because approximately 31% of emissions come from the residential and commercial sector, according to the 2005 GHG inventory. To combat this, the proposed program is estimated to reduce carbon emissions in Alameda County by more than 41,000 MT in its first 2 years, and by more than 3 million tons between now and 2020. Therefore, participation in the Energy Upgrade California program will help achieve any future GHG reduction targets that the City may set.

Emission Reductions – The emissions reduction achieved through energy efficiency retrofits will vary, but promises to be substantial. A savings of 1 million kWh reduces emissions by more than 270 MT CO_2e. For every 1,000 therms of natural gas that is saved, the jurisdiction is achieving an emissions reduction of 6.6 MT CO_2e. Based on an estimated 7% participation rate among housing units in the community, supported by the SEP II Residential Energy Efficiency Program, implementation of the Energy Upgrade California program in the City of Dublin is estimated to result in a reduction of **4,480 MT CO_2e/year** (0.95% reduction relative to 2020 BAU).

A.2.3 Solar Conversion Programs

Context – The City of Dublin promotes solar installation within the community through two solar conversion programs, which include Solar Cities and CaliforniaFIRST.

Solar Cities is a joint project of the Cities of Dublin, Livermore, and Pleasanton focused on educating consumers about residential solar energy. The City of Dublin joined Solar Cities in 2008. The program features free workshops, Internet resources, and targeted information to assist homeowners to make decisions about investing in a photovoltaic (PV) solar system. Furthermore, the City is a participant in the CaliforniaFIRST program, which provides access to financial assistance for homeowners seeking to install PV systems.

The CaliforniaFIRST Program is a property assessed clean energy (PACE) financing program. The City joined CaliforniaFIRST is 2009. PACE programs allow property owners within participating regions to finance the installation of energy and water improvements on their home or business and pay the amount back as a line item on their property tax bill. The CaliforniaFIRST Program is sponsored by the California Statewide Communities Development Authority, an association of counties and cities, in partnership with Renewable Funding. The City of Dublin has opted in to the CaliforniaFIRST Program, which allows its residents to participate in the program and receive funding from Renewable Funding for the installation of energy and water improvements on their home.

Solar PV systems generate energy by harnessing sunlight. Technologies that can convert solar energy into electricity can be installed at the point of use. Solar energy is a clean source of electricity that does not produce GHG emissions. Installing PV panels on homes can also save residents money by offsetting the need for power from the grid and can increase local energy security and reliability.

Cost savings will begin to accrue after a payback period of 10–15 years. Other benefits include reduced emissions of criteria air pollutants from power plants, development and local demonstration of renewable energy technology, and increased residential energy reliability, security, and cost certainty.

The State of California offers rebates to homeowners who install solar on their homes. Additionally, the federal government offers tax incentives for installing photovoltaic panels on commercial-zoned buildings.

Emission Reductions – Dublin residents and businesses are projected to install about 22.76 acres of solar panels by 2020. Based on the system size of the Santa Rita Jail Case study, this level of installation of PV panels in Dublin is estimated to result in a reduction of **4,500 MT CO_2e/year** (0.96% reduction relative to 2020).

The Santa Rita Jail Case Study prepared in April 2002 highlights the system specifications, the multiple benefits of the system and the environmental savings. The 1.18 megawatt system

consists of three acres of solar photovoltaic panels and generates 1,460,000 kWH annually. Over its 25-year life, it is predicted that the PV panels on the Santa Rita Jail will result in 36,500,000 kWH of energy production, which is equivalent to a reduction of approximately 38,000 tons of CO_2 emissions.

A.2.4 Reduce Solar Installation Permit Fee

Context – In 2006, the City of Dublin reduced the building permit fee related to the installation of photovoltaic systems installed as an incentive for property owners to install solar electricity generating capacity on their homes and businesses.

The City of Dublin recognizes the value of solar energy. Solar energy is a clean source of electricity that does not produce GHG emissions. Installing photovoltaic (PV) panels on homes can also save residents money by offsetting the need for power from the grid, and can increase local energy security and reliability. Other benefits include reduced emissions of criteria air pollutants from power plants, development and local demonstration of renewable energy technology, and increased residential energy reliability, security, cost certainty and local green jobs.

Emission Reductions – Reductions from this measure are included in Measure A.2.3

A.3 Solid Waste and Recycling Measures

The City of Dublin has a goal of reducing waste sent to the landfill by 75%. To achieve this reduction goal, the City has implemented a variety of measures, which include expanding existing commercial and residential recycling and composting programs and expanding community education and outreach initiatives. As demonstrated in this document, many of StopWaste.Org's program areas to divert solid waste dovetail nicely with Dublin's own programs to reduce GHG emissions. ICLEI and StopWaste.Org have produced studies and evidence to show the reductions in GHG emission from recycling, composting, and reducing waste.

For example, programs for recycling and preventing waste contribute to reducing the energy and transportation needed to manufacture and ship virgin products and packaging. Composting contributes by reducing methane produced in the landfill and reducing the need for energy intensive fertilizers and pesticides. The EPA 2000 report states (EPA 2000):

> There are no plausible scenarios in which landfilling minimizes GHG emissions from waste management. For yard waste, GHG emissions are roughly comparable from landfilling and composting; for food waste, composting yields significantly lower emissions than landfilling. For paper waste, landfilling causes higher GHG emissions than either recycling or incineration with energy recovery.

Results provided in this report from research conducted by ICLEI and StopWaste.Org show that practices such as residential and commercial recycling and composting, buying recycled products and green building play important roles in a local government's strategy to mitigate emissions. In fact, GHG mitigation can be seen as an umbrella under which a jurisdiction's waste diversion programs play a substantial role.

A.3.1 Construction and Demolition Debris Ordinance

Context – Since 2005, the City has implemented a Construction and Demolition Debris Ordinance with a required 100% of asphalt and concrete recycled, and a minimum of 50% of all other materials recycled. The City's diversion rate has consistently been between 80% and 90% since 2005, well above the 50% requirement.

Construction and demolition (C&D) debris represents a substantial portion of the total waste stream in Alameda County—up to 21%. Construction of a typical residential home produces approximately 17,000 pounds of C&D waste. Reducing C&D waste is critical to the City of Dublin because the City is still growing. C&D waste generally consists of wood, drywall, metal, concrete, dirt, and cardboard. After the organic materials are sent to the landfill, they break down and emit methane, a potent GHG. Recycling C&D waste not only keeps it from ending up in the landfill, but also reduces the upstream energy consumption that would occur to manufacture new construction materials.

Emission Reductions – Emission reductions for this measure are included in Measure A.3.2.

A.3.2 Citywide Diversion Goal of 75%:

Context –In 2008, the Dublin City Council adopted a goal to divert 75% of waste from the landfill. To achieve this goal, the City is focusing its efforts on increasing the recycling of organics, cardboard boxes, plastic film, paper, and packaging material. The City currently has in place a variety of programs for diverting waste and the City continues to explore additional programs to help reach the 75% diversion goal.

Emission Reductions – Attainment of the 75% diversion goal is estimated to result in a reduction of **4,911 MT CO_2e/year** (1.04% reduction relative to 2020 BAU).

A.3.3 Tiered Rate Structure for Garbage and Recycling

Context – Since 2005, the City has offered a tiered rate structure, which places recycling services free and organics (composting) services at a significant discount to garbage services to encourage greater recycling and composting within the community. Recycling and composting programs reduce GHG emissions because manufacturing products with recycled materials avoids emissions from the energy that would have been used by extracting, transporting and processing virgin materials.

Emission Reductions – Emission reductions for this measure are included in Measure A.3.2.

A.3.4 Commercial Recycling Program

Context – The business community and schools are an important component of the Dublin community. In 2005, the City began offering a free commercial recycling program that also includes free indoor recycling containers for schools and businesses. Indoor recycling containers encourage employees and students to recycle by conveniently locating recycling containers near their work areas. Programs for recycling contribute to reducing energy and transportation needed to manufacture and ship virgin products.

Emission Reductions – Emission reductions for this measure are included in Measure A.3.2.

A.3.5 Commercial Food Waste Collection Program

Context – In 2005, the City began offering a commercial food waste recycling program, which includes a subsidy to encourage greater food waste recycling. As of June, 2010, the City has over 60 businesses participating in this program. In 2009, the commercial food waste recycling program resulted in 2,853 tons of food waste being diverted from the landfill.

Reducing the amount of food waste sent to the landfill also reduces the CH_4 emissions produced when organic waste decomposes in the absence of oxygen at the landfill. CH_4 is a powerful GHG, 21 times more potent than CO_2. Food waste, which produces more methane than any other organic material, can be used for producing compost. Additionally, the resultant compost reduces GHGs in three ways:

1) The composting process itself helps to bind or sequester carbon in the soil.
2) The resultant compost results in reduced use of nitrogen fertilizers, which are not only energy intensive to produce, but are also a leading source of N_2O emissions, a potent GHG.
3) Using compost helps to mitigate the decline in soil quality expected with climate change. Sending organics to a composting facility reduces more GHGs than sending organics to a landfill, even one with methane recovery.

Emission Reductions – Food waste produces more methane per wet ton than most other municipal solid waste materials. If the City of Dublin were to reduce the amount of food waste that is sent to the landfill by 1 metric ton, the community would prevent approximately 1 MT CO_2e from entering the atmosphere. Emission reductions for this measure are included in Measure A.3.2.

A.3.6 Promote Commercial Recycling

Context – In 2005, the City began promoting commercial recycling in the City. The City has developed commercial recycling guides for businesses and the City's franchise waste hauler conducts two business audits per business day to increase diversion efforts in the commercial sector. Programs for recycling contribute to reducing the energy and transportation needed to manufacture and ship virgin products and therefore play an important role in the City's efforts to reduce GHG emissions associated with the waste sector.

Emission Reductions – Emission reductions for this measure are included in Measure A.3.2.

A.3.7 Promote Multi-family Recycling

Context – In 2005, the City began promoting multi-family recycling. The City has developed multi-family outreach packets and recycling bags for all multi-family units with shared recycling service. Historically, recycling participation rates within multi-family developments is low and the City of Dublin promotes high density residential development. Therefore, it is important to promote recycling within these developments. Programs for recycling contribute to reducing the energy and transportation needed to manufacture and ship virgin products.

Emission Reductions – Emission reductions for this measure are included in Measure A.3.2.

A.3.8 Curbside Residential Recycling Program

Context – The City offers a convenient, free recycling program that includes curbside pickup for residential neighborhoods to encourage greater recycling efforts. The curbside residential

recycling program was established prior to 2005. Curbside pickup includes garbage, recycling and organics (composting). The goal of curbside pickup is to remove barriers to recycling. Increased recycling contributes to reducing the energy and transportation needed to manufacture and ship virgin products.

Emission Reductions – Emission reductions for this measure are included in Measure A.3.2.

A.3.9 Curbside Organics Collection Program

Context – The City offers a convenient organics program that includes curbside pickup of food waste and yard waste for residential neighborhoods. This program, which began in 2005, is designed to encourage greater recycling efforts. In 2005, food waste and plant debris accounted for nearly 20% of the community's waste. It is critical to remove these items from the waste stream because they generate methane within the anaerobic environment of a landfill. Additionally, food waste and plant debris can be composted which contributes by reducing methane produced in the landfill and reducing the need for energy intensive fertilizers and pesticides. In 2009, the curbside organics collection program resulted in 4,467 tons of organic material being diverted from the landfill.

Emission Reductions – Emission reductions for this measure are included in Measure A.3.2.

B. Municipal Operations Measures

The City of Dublin has also undertaken a number of municipal operations measures resulting in reduced GHG emissions relative to the base year of 2005. As noted in *Chapter III Forecast for Greenhouse Gas Emissions*, the forecast of government operations emissions is included within the CAP's community inventory. As such, the various municipal operations that reduce GHG emissions and the resultant reduction metric are outlined below.

B.1 Transportation and Land Use Measures

There are several ways to reduce GHG emissions from the transportation sector, which include encouraging alternative modes of transportation other than solo-driving, using vehicles that release fewer GHGs and implementing smart growth policies. The measures below outline policies that the City has in place to encourage its employees to reduce their GHG emissions related to the transportation sector.

B.1.1 City Hybrid Vehicles

Context – The City of Dublin has five vehicles for its employees to use, two of which are hybrid vehicles. Hybrid cars get better gas mileage than the traditional internal combustion engine. Most hybrid vehicles get between 20 and 30 miles per gallon more than standard automobiles. All hybrids shut off the gas engine automatically when the car is stopped. This saves fuel and is better for the environment. When you press the gas pedal, the engine turns back on automatically. The gas engine will also come on to start charging the batteries when the vehicle becomes low on power. Because less gasoline is burned in these vehicles, they emit less pollution and a lower level of carbon dioxide into the atmosphere.

Emission Reductions – Reductions anticipated from use of City hybrid vehicles have not been quantified and supported by substantial evidence. However, this measure supports achievement of other recommended transportation measures.

B.1.2 Commute Alternative Program

Context – The City's Commute Alternative Program is a policy designed to encourage alternative modes of transportation among the City's workforce. The City provides incentives to its employees who use alternatives to solo driving, which include public transportation, biking, walking, or carpooling. The City provides an incentive of $2.00/day to use alternative transportation modes. Additionally, the City participates in the Alameda County CMA Guaranteed Ride Home Program.

Emission Reductions – Reductions anticipated from the commute alternative program have not been quantified and supported by substantial evidence. However, this measure supports achievement of other recommended transportation measures.

B.2 Energy Measures

Increasing the energy efficiency of municipal buildings has substantial potential to both reduce GHG emissions and save the City and the community money. The energy consumed to heat, light and power City owned buildings is a direct source of municipal GHG emissions. The largest source of emissions from government operations is the City's buildings, which emit about half of the municipal GHGs.

B.2.1 LEED Silver Requirement for New City Buildings Costing More Than $3 Million

Context – In 2004, the City Council adopted a Resolution which required that all new civic buildings over $3 million be built to achieve Silver certification under the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System™. The LEED program recognizes that building performance in the areas of human and environmental health, sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality, results in more efficient buildings. The Shannon Community Center, which was the first completed in February 2009, includes numerous energy efficient measures. The Shannon Community Center is awaiting LEED certification. Several capital improvement projects are planned that will trigger the LEED Silver certification requirement, such as the Emerald Glen Park Recreation & Aquatic Complex, the Cultural Arts Center, and the Emerald Glen Park Community Center. These buildings will be constructed to achieve LEED Silver certification.

LEED certification provides independent, third-party verification that a building project meets the high performance standards. LEED-certified buildings are awarded a plaque by the U.S. Green Building Council. LEED certification is recognized nationwide as proof that a building is environmentally responsible, profitable, and a healthy place to live and work.[18] The certification can be applied to every building type and phase of a building lifecycle.

Emission Reductions – LEED certification of municipal buildings is estimated to result in a reduction of **79 MT CO2e/year** (0.02% reduction relative to 2020 BAU).

B.2.2 Window Film on the Civic Center

Context – In September 2009, an energy efficient window film at the Dublin Civic Center was installed. The installation of the window film has improved the energy efficiency of the Civic Center.

[18] Visit www.usgbc.org for more information on LEED.

Emission Reductions – The window film is anticipated to reduce the City's carbon footprint by reducing GHG emissions by approximately **16 MT CO_2e/yr** (< 0.01% reduction relative to 2020 BAU), which is a result of an estimated reduction in energy use annually of 73,766 kWh

B.2.3 Light Emitting Diode (LED) Park Lights

Context – The City of Dublin was awarded a grant in 2009 for the installation of LED lights in various parks within the community. Once installed, these lights will improve energy efficiency at these locations.

Emission Reductions – Reductions anticipated from installing LED lights at the Dublin Sports Park have not been quantified and supported by substantial evidence. However, this measure supports achievement of other recommended energy efficiency measures.

B.3 Solid Waste and Recycling Measures

As mentioned previously, the City of Dublin has a goal of reducing waste sent to the landfill by 75%. To achieve this reduction goal, the City has implemented a variety of communitywide measures. Furthermore, Dublin is placing increasing emphasis on achieving emissions reductions through promoting sustainable landscaping practices such as those outlined in StopWaste.Org's *Bay-Friendly Landscape Guidelines.* Results provided in research conducted by ICLEI and StopWaste.Org show that practices such as Bay-Friendly Landscaping play important roles in a local government's strategy to mitigate emissions. In fact, GHG mitigation can be seen as an umbrella under which a jurisdiction's waste diversion programs play a substantial role.

B.3.1 Bay-Friendly Landscaping Policy

Context – The City has been employing Bay-Friendly Landscaping practices within the City owned parks and landscaping medians for some time. Also, in 2009, the City adopted a Bay-Friendly Landscaping Policy requiring new large Civic projects to meet a certain level of points on the Bay-Friendly Landscaping Checklist.

Bay-Friendly Landscaping is an integrated solution that fosters soil health, conserves water, reduces waste, and reduces emissions. Through the Bay-Friendly Landscaping Program, StopWaste.Org provides training, landscape design assistance, and grant funding to local governments in Alameda County. The objective of the resources that StopWaste.Org provides is to assist local governments to design public landscapes that cost less to maintain, consume fewer resources, send less waste to the landfill, and do not negatively affect the San Francisco Bay.

The Bay-Friendly Landscaping practices described below not only serve to reduce emissions, but provide many additional benefits. Trees, for example, provide habitat for birds, beautify urban areas, decrease the heat island effect, increase property values, and help to control stormwater runoff. Shade trees also reduce the need for air conditioning, thereby cutting energy costs. Selecting appropriate plants that require less shearing reduces the need for running various pieces of equipment. This not only reduces GHG emissions, but reduces local air and noise pollution. Additionally, keeping lawn and plant clippings on-site improves soils. Grass-cycling, mulching, and using compost creates healthier landscapes without the use of synthetic pesticides and fertilizers, all of which can help reduce water pollution.

According to the CIWMB, yard trimmings are one of the largest components of municipal waste in California. Bay-Friendly Landscaping practices constitute an integrated, conscious approach to reducing this waste. These practices include selecting native or Mediterranean plants, which use

little water; keeping plant debris and grass clippings on-site; nurturing the soil by using mulch and compost; minimizing lawn size; and planting trees strategically to moderate temperatures.

Such practices not only reduce waste, but also reduce costs and resource consumption by reducing the need for irrigation and energy intensive fertilizers and pesticides. Nitrogen fertilizers release nitrous oxide, a potent GHG, into the atmosphere. Using compost reduces the need for nitrogen fertilizers by at least 20%. These practices also restore the soil's ability to absorb and filter water, reducing runoff into waterways.

Emission Reductions – Emission reductions anticipated from implementation of the Bay-Friendly Landscaping Policy have not been quantified and supported by substantial evidence. However, this measure supports achievement of recommended energy efficiency and waste management measures.

C. Public Outreach Programs

Public outreach programs constitute an important component of the City's GHG reduction strategies. The City of Dublin, through its many environmental programs and City events, can educate the community on environmentally-friendly behaviors. The City also can motivate the community to improve our community and environment and to reduce GHG emissions through reductions in energy use, transit, waste and through many other actions.

C.1 Great Race for Clean Air

Context – The Great Race for Clean Air Challenge is a friendly competition between Tri-Valley area employers to encourage the use of commute alternatives to and from work such as carpooling, biking, and publicly provided transit. The competition lasts two months. In 2009, the City of Dublin was one of 17 teams that participated in the competition. Ten Dublin employees participated and together saved 4,293 pounds of CO_2.

Emission Reductions – Measures C.1 through C.5 are estimated to result in a combined reduction of **471 MT CO_2e/year** (0.1% reduction relative to 2020 BAU).

C.2 Walk 'n' Roll to School

Context – The Walk 'n' Roll to school program is designed to educate Tri-Valley parents and students about clean and green alternatives for getting to and from school. The goal of the Tri-Valley Resource Team's Walk 'n' Roll to School campaign is to reduce school commute traffic, which would result in reduced GHG emissions and increased safety around schools, and to provide an opportunity for children to incorporate more exercise into their day.

Emission Reductions – Measures C.1 through C.5 are estimated to result in a combined reduction of **471 MT CO_2e/year** (0.1% reduction relative to 2020 BAU).

C.3 Work with Schools on "Go Green" Recycling and Composting Programs

Context – The "Go Green" program is an education tool that encourages schools in the City to increase their recycling and composting efforts. The Go Green Initiative is a simple, comprehensive program designed to create a culture of environmental responsibility on school campuses across the nation. Founded in Pleasanton in 2002, Go Green provides a framework for environmental responsibility through five principles: 1) generate compost, 2) recycle, 3) educate, 4) evaluate the environmental impact of all activities, and 5) nationalize responsible paper

consumption. In Dublin, the City's waste hauler, Amador Valley Industries (AVI), funds Dublin Unified School District schools that choose to participate in the Go Green program. As of June, 2010, six Dublin Unified Schools were participating in the program (66% participation rate).

Emission Reductions – Measures C.1 through C.5 are estimated to result in a combined reduction of **471 MT CO_2e/year** (0.1% reduction relative to 2020 BAU).

C.4 AVI Educational Presentations

Context – As part of their contract, the City's waste hauler, AVI, is required to present information on recycling and composting programs that the City offers to various organizations and businesses. AVI provides a minimum of 12 presentations a year.

Emission Reductions – Measures C.1 through C.5 are estimated to result in a combined reduction of **471 MT CO_2e/year** (0.1% reduction relative to 2020 BAU).

C.5 Promote Bike to Work Day

Context – Each year, the City of Dublin participates in Bike to Work Day. The 2010 Bike to Work Day and the sponsored Energizer Station were held on Thursday, May 13, at the Dublin/Pleasanton BART station underpass. The Energizer Station, co-hosted by the Cities of Dublin and Pleasanton, Alameda County Public Works, Dublin Cyclery, Hacienda Business Park, and BART saw over 430 cyclists pass through. Energizer Stations throughout Alameda County and in the Bay Area saw a 10% increase in the number of cyclists participating in the event.

Emission Reductions – Measures C.1 through C.5 are estimated to result in a combined reduction of **471 MT CO_2e/year** (0.1% reduction relative to 2020 BAU).

VI. Measures Implemented By the State That Will Reduce Emissions Included In the City of Dublin Inventory

In addition to Dublin's implementation of measures to reduce GHG emissions within the community, the effects of measures recently implemented at the State level will reduce GHGs emitted within the City and are included as part of the City's GHG emissions inventory and forecast.

In California, numerous policies have been adopted by the State Legislature or the Governor, which are projected to reduce GHG emissions. The following sections briefly describe the policies that could have the greatest effect on reducing GHG emissions in Dublin. Additional legislation affecting GHG emissions in Dublin is summarized in *Section I. Introduction*.

A. State Climate Change Planning

A.1. California Global Warming Solutions Act (AB 32)

Context – In 2006, Governor Schwarzenegger signed AB 32—the Global Warming Solutions Act—into law. AB 32 institutes a mandatory limit on GHG emissions to achieve the target of reducing Statewide emissions to 1990 levels by the year 2020. The bill directs ARB to establish a mandatory emissions reporting system to track and monitor emission levels and to develop a wide range of compliance options and enforcement mechanisms.

As a part of AB 32 implementation, ARB adopted a *Climate Change Scoping Plan* in December 2008. This plan provides some guidance on how local government can address climate change and play an active role in reducing statewide emissions. Specifically, the plan sets a target to reduce statewide emissions by nearly 30% below 2008 levels by 2020. To reach this target, the plan establishes many measures, including:

- Developing a California cap-and-trade program.
- Expanding energy efficiency programs.
- Establishing targets for transportation-related GHG emissions.
- Supporting the implementation of a high-speed rail system.
- Expanding the use of green building practices.
- Increasing waste diversion, composting, and commercial recycling toward zero-waste.
- Continuing water efficiency programs and using cleaner energy sources to move and treat water.
- Establishing a Million Solar Roofs Programs.
- Achieving a statewide renewable energy mix of 33%.
- Developing and adopting the Low Carbon Fuel Standard.
- Implementing vehicle efficiency measures for light, medium, and heavy-duty vehicles.
- Adopting measures to reduce gases with high global warming potential.
- Reducing methane emissions at landfills.
- Preserving forest sequestration and encouraging the use of forest biomass for sustainable energy generation.

Emission Reductions – ARB has not yet set recommendations for local governments for reducing GHG emissions; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in reducing GHGs within the state. These decisions will play an important role because local governments have the primary authority to plan, zone, approve,

and permit how land is developed to accommodate the changing needs of their communities and population growth.

A.2 Executive Order S-13-08 and the California Climate Adaptation Strategy

Context – In November of 2008, Executive Order S-13-08 was signed, which specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. The *California Climate Adaptation Strategy*, completed in December 2009, is a first-of-its-kind multi-sector strategy to help guide California's efforts in adapting to climate change impacts. It summarizes climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The strategy considers the long-term complex and uncertain nature of climate change and establishes a proactive foundation for an ongoing adaptation process. Rather than address the detailed impacts, vulnerabilities, and adaptation needs of every sector, it prioritizes those sectors determined to be at greatest risk. The strategy is intended to be used directly by California State agencies in their efforts to plan for climate impacts.

Emission Reductions – Emission reductions anticipated from actions of Executive Order S-13-08 have not been quantified and supported by substantial evidence. However, this measure supports achievement of recommended CAP measures.

A.3 Senate Bill 732 – California Strategic Growth Council

Context – In 2008, the California Senate passed SB 732, which established a Strategic Growth Council, which is charged with coordinating policies across State agencies to support a unified vision for land use development in the State. This vision will serve as a reference point for local land use policies.

Emission Reductions – Emission reductions anticipated from actions of the Strategic Growth Council have not been quantified and supported by substantial evidence. However, this measure supports achievement of recommended CAP measures.

B. Energy

B.1 Senate Bill 1078, Senate Bill 107, and Executive Order S-14-08 –Renewable Portfolio Standards

Context – In 2002, the California Senate passed SB 1078 requiring public utilities to gradually increase the percentage of their energy supply generated from renewable sources, reaching 20% renewable content by 2017. SB 107 accelerated the timeframe of SB 1078 for it to take effect in 2010. In November of 2008, Executive Order S-14-08 was signed, which increased the amount of renewable power generation to 33% by 2020. Renewable energy could include wind, solar, geothermal, or any "Renewable Portfolio Standard (RPS)-eligible" sources. This means that, over time, a larger and larger share of the energy electrifying homes and businesses in the City of Dublin will be generated with clean power. The policy should have an important effect on City emissions because 31.1% of total emissions come from commercial and residential energy use in Dublin, according to the 2005 inventory.

Emission Reductions –It is anticipated that PG&E, Dublin's electricity provider, would meet the 20% RPS requirement by 2010, as required by law, and this performance criteria would also be in effect at the CAP target year (2020). Executive Order S-14-08 would increase the RPS further to

33% by 2020. Although this order has yet to be codified, the CAP assumes 33% RPS would be achieved by 2020. Therefore, in 2020, a minimum of 33% of the electricity consumed by the City's residential, commercial, and industrial uses would be produced by renewable resources and would not generate additional GHG emissions.

The 2005 PG&E-specific electricity emission factor used to calculate GHG emissions associated with the City's electricity consumption accounted for the percentage of renewable resources used by PG&E for electricity production in 2005. PG&E's 2008 electricity production portfolio was comprised of approximately 14% renewable resources (PG&E 2008). Although it is likely that the percentage of renewable resources in 2005 was less than in 2008, the difference between the 2008 and 2020 renewable resource portfolio was used to conservatively calculate the emission reduction attributable to RPS. Therefore, an additional 19% (33%-14% = 19%) of the City's 2020 GHG emissions, associated with electricity consumption, would be reduced between current conditions and 2020 as a result of the additional use of clean energy. To derive the reduction amount, the total GHG emissions (87,476 MT CO2e) that result from electricity consumption within the inventory projection from PG&E for 2020 is multiplied by the 19% that will come from new renewable sources. Based on these assumptions, implementation of the RPS in Dublin would result in a reduction of **16,621 MT CO_2e/year** (3.5% reduction relative to 2020 BAU).

B.2 Executive Order S-20-04 – Energy Efficiency in State Buildings

Context – Executive Order S-20-04 was signed July 27, 2004, and directs the State to commit to aggressive actions to reduce the electricity use of State buildings by implementing cost-effective energy efficiency and green building strategies. To this end, the executive order directs all facilities owned, funded, or leased by the State (and encourages cities, counties, and schools as well) to take measures to reduce grid-based energy purchases for State-owned buildings by 20% by 2015. This is to be done through cost-effective measures to increase energy efficiency and distributed generation technologies. These measures include designing, constructing, and operating all new and renovated facilities owned by the State and paid for with State funds as buildings certified "LEED Silver" or higher; seeking out office space leases in buildings with a EPA ENERGY STAR rating; and purchasing or operating ENERGY STAR electrical equipment whenever cost effective. The California Highway Patrol Office is located in Dublin.

Emission Reductions – This measure will result in reductions of GHG emission in the City. However, the amount of reductions anticipated from increasing energy efficiency in State buildings have not been quantified, so an estimated amount has not been included in the Plan. Therefore, GHG emission reductions from these measures would result in additional reductions not included in the quantified reductions under this Plan.

C. Transportation and Land Use

C.1 Assembly Bill 1493 – Vehicle Fuel Efficiency Standards

Context – Nationwide, automobile manufacturers are bound by fuel efficiency standards set by the U.S. Department of Transportation. These standards, known as the Corporate Average Fuel Economy (or "CAFE") standards, require that the fleet of passenger cars sold by any single manufacturer have an average fuel economy of 27.5 mpg – the same standard that was in place in 1985, despite technical progress and increased understanding of the environmental impacts of fossil fuel combustion. The CAFE standards are adopted at the federal level, and states are prevented from passing laws addressing vehicle fuel economy. In response to these stagnant federal standards, the California Assembly passed AB 1493, which allows the California Air

Resources Board to create carbon dioxide emissions standards for cars sold in California. They argue that a GHG emissions standard is distinct from a fuel economy standard, despite the fact that it would necessitate improved gas mileage. The EPA granted a waiver to California in February of 2009 to pursue its own regulations under AB 1493; however, the State has not yet done so. If AB 1493 is implemented in the next few years, this could have a significant impact on the reduction of GHG emissions in the City of Dublin because the total percentage of emissions from transportation was 65.3% in 2005.

Emission Reductions – The emission reduction potential associated with implementation of AB 1493 vehicle emission standards would vary depending on the first regulated model year and vehicle turnover between the present fleet and the fleet in 2020. To provide an estimate of the reasonably foreseeable GHG emission reduction potential of motor vehicle emission regulations, the GHG emissions reduction associated with AB 1493 was estimated using information presented in the ARB *Climate Change Scoping Plan*. The Scoping Plan expects an approximate 19.7% reduction in on-road mobile source GHG emissions between 2010 and 2020 (10 years).

AB 1493 allows two model years of lead time for automakers to comply with the vehicle emission standards. For this reason, it was assumed that AB 1493 would be 80% implemented by the year 2020 (allowing for two years of delay). Thus, the likely GHG emission reduction of AB 1493 for on-road mobile-source GHG emissions in Dublin was assumed to be approximately 12.2%, for a reduction of **35,642 MT CO_2e/year** (7.6% reduction relative to 2020 BAU).

C.2. Executive Order S-01-07 – Low Carbon Fuel Standard

Context – Executive Order S-01-07 was signed January 18, 2007, and directs ARB to develop a Low Carbon Fuel Standard (LCFS). The LCFS would reduce the carbon intensity of California's transportation fuels by at least 10% by 2020. The LCFS will also incorporate compliance mechanisms providing flexibility to fuel providers to meet requirements to reduce GHG emissions. The LCFS will examine the full fuel cycle impacts of transportation fuels and ARB will work to design the regulation in a way that most effectively addresses the issues raised by the Environmental Justice Advisory Committee and other stakeholders.

Emission Reductions – This measure will result in reductions of GHG emissions. However, the amount of reductions anticipated from the LCFS have not been quantified, so an estimated amount has not been included in the Plan. Therefore, GHG emission reductions from these measures would result in an additional reduction not included in the quantified reductions under this plan.

C.3. Senate Bill 375

Context – In 2008, the California Senate passed SB 375, which aims to reduce GHG emissions by connecting transportation funding to land use planning. SB 375 creates a process by which local governments and other stakeholders work together within their region to reduce GHG emissions through integrated development patterns, improved transportation planning, and other transportation measures and policies.

Emission Reduction – SB 375 requires ARB to develop the targets for reducing GHG emissions caused by passenger vehicles for 2020 and 2035 by September 30, 2010. Targets are anticipated to be released by June 30, 2010. Implementation of these targets and the measures to achieve those targets will require the collaboration of local governments such as Dublin and metropolitan planning organizations such as MTC.

VII. Summary of Emission Reduction Measures

Based on the emissions reductions estimated to be achieved after 2005 through the above measures, the GHG emissions in the City of Dublin are estimated to be reduced by 99,000 MT CO_2e or 21.01% below 2020 BAU emissions which will slightly exceed the emission reduction target of 20%.

Table 12 summarizes the contribution of proposed CAP measures toward achievement of the reduction target.

Table 13 summarizes the City's GHG emissions compared to the BAAQMD GHG Efficiency Threshold of 6.6 MT CO2e per service population, and shows the effect of the reduction strategies compared to this threshold. The City's reduction measures outlined in the CAP result in a projected GHG Efficiency Metric for 2020 of 4.2 MT CO2e per service population, which is 36.9% below the 6.6 threshold.

Table 12 – *Summary of GHG Reduction Measure Performance*

Measure Number and Title	GHG Reductions (MT CO_2e/yr)	% Reduction Relative to 2020 BAU
A. Communitywide Measures		
A.1. Transportation and Land Use Measures		
A.1.1. Transit-Oriented Development	4,357	0.9247%
A.1.2. High-Density Development	*Included in A.1.1*	
A.1.3. Mixed-Use Development	*Included in A.1.1*	
A.1.4. Bicycle Parking Requirements	1,825	0.3875%
A.1.5. Streetscape Master Plan	2,922	0.6200%
A.1.6. Multi-Modal Map	2,922	0.6200%
A.1.7. Electric and Plug In-Hybrid Charging Stations at the Library	*Supporting Measure*	
A.1.8. General Plan Community Design and Sustainability Element	*Supporting Measure*	
A.1.9. Work with LAVTA to Improve Transit	1,461	0.3100%
A.1.10. Bikeways Master Plan	3,506	0.7440%
Subtotal Transportation and Land Use	**16,993**	**3.61%**
A.2. Energy Measures		
A.2.1. Green Building Ordinance	15,287	3.2442%
A.2.2. Energy Upgrade California	4,480	0.9508%
A.2.3. Solar Conversion Programs	4,500	0.9550%
A.2.4. Reduce Solar Installation Permit Fee	*Included in A.2.3*	
Subtotal Energy	**24,267**	**5.15**
A.3. Solid Waste and Recycling Measures		
A.3.1. Construction and Demolition Debris Ordinance	*Included in A.3.2*	
A.3.2. Citywide Diversion Goal of 75%	4,911	1.0422%
A.3.3. Tiered Rate Structure for Garbage and Recycling	*Included in A.3.2*	
A.3.4. Commercial Recycling Program	*Included in A.3.2*	
A.3.5. Commercial Food Waste Collection Program	*Included in A.3.2*	
A.3.6. Promote Commercial Recycling	*Included in A.3.2*	
A.3.7. Promote Multi-family Recycling	*Included in A.3.2*	
A.3.8. Curbside Residential Recycling Program	*Included in A.3.2*	
A.3.9. Curbside Organics Collection Program	*Included in A.3.2*	
Subtotal Solid Waste and Recycling	**4,911**	**1.04%**
Total Communitywide Measures	**46,171**	**9.80%**
B. Municipal Operations Measures		
B.1. Transportation and Land Use Measures		
B.1.1. City Hybrid Vehicles	*Supporting Measure*	
B.1.2. Commute Alternative Program	*Supporting Measure*	
B.2. Energy Measures		
B.2.1. LEED Silver Requirement for New City Buildings > $3mil	79	0.0167%
B.2.2. Window Film on the Civic Center	16	0.034%
B.2.3. LED Park Lights	*Not quantifiable at this time*	
B.3. Solid Waste and Recycling Measures		
B.3.1. Bay-Friendly Landscaping Policy	*Supporting Measure*	
Total Municipal Operations Measures	**95**	**0.02%**
C. Public Outreach Programs		
C.1. Great Race for Clean Air	471	0.1000%
C.2. Walk 'n' Roll to School		
C.3. Work with Schools on "Go Green" Recycling and Composting		
C.4. AVI Educational Presentations		
C.5. Promote Bike to Work Day		
Total Public Outreach Programs	**471**	**0.10%**

Table 12 – *Summary of GHG Reduction Measure Performance (Cont.)*

Statewide Reductions		
Renewable Portfolio Standards (33% -2020)	16,621	3.5272%
AB 1493: Vehicle Emission Standards	35,642	7.5641%
Total Statewide Reductions	**52,263**	**11.09%**
Total Communitywide Measures	**46,171**	**9.80%**
Total Municipal Operations Measures	**95**	**0.02%**
Total Public Outreach Programs	**471**	**0.10%**
Total Statewide Reductions	**52,263**	**11.09%**
Total Reductions	**99,000**	**21.01%**
	Target: 20% from 2020 BAU	

Table 13 – BAAQMD Efficiency Threshold Analysis

City of Dublin Community-wide Greenhouse Gas Emissions Inventory					
2005			**2020**		
	MT CO2e	**%**		**MT CO2e**	**%**
Residential	51,154	14.3%	Residential	77,973	16.5%
Commercial/Industrial	60,183	16.8%	Commercial/Industrial	82,043	17.4%
Transportation	233,384	65.3%	Transportation	292,151	62.0%
Waste	12,490	3.5%	Waste	19,038	4.0%
Total	357,211	100.0%	Total	471,205	100.0%
Reduction from CAP strategies (from BAU)		0.00%	Reduction from CAP strategies (from BAU)		9.92%
Reduction from Statewide initiatives (from BAU)		0.00%	Reduction from Statewide initiatives (from BAU)		11.09%
Total (reduction from BAU)		0.00%	Total (reduction from BAU)		21.01%
Total GHG with Reduction Measures	357,211		Total GHG with Reduction Measures	372,205	
2005 Community GHG Efficiency Analysis			2020 Community GHG Efficiency Analysis		
Population	41,200		Population	62,800	
Jobs	19,520		Jobs	26,610	
Service Population (SP)	60,720		Service Population (SP)	89,410	
GHG Before Reduction Measures	357,211	MT CO2e	GHG Before Reduction Measures	471,205	MT CO2e
Projected GHG/SP	5.9	MT CO2e/SP/year	Projected GHG/SP	5.3	MT CO2e/SP/year
GHG with Reduction Measures	357,211	MT CO2e	GHG with Reduction Measures	372,205	MT CO2e
Projected GHG/SP	5.9	MT CO2e/SP/year	Projected GHG/SP	4.2	MT CO2e/SP/year
Target GHG/SP	6.6	MT CO2e/SP/year	Target GHG/SP	6.6	MT CO2e/SP/year
% Below Target	10.9%		% Below Target	36.9%	
2020 Efficiency Reduction Goal Below 2005 Projected GHG/SP = 29.24%					

VIII. Implementation, Monitoring and Future Steps

GHG emissions are an issue of growing concern for communities across the U.S. and around the world. The City of Dublin has displayed great leadership and foresight in choosing to confront this issue now. By reducing the amount of GHGs emitted by the community, Dublin joins hundreds of other American cities in stemming GHG emissions and the impacts associated with it.

In addition to mitigating the effects of GHG emissions, the City of Dublin stands to benefit in many other ways from the proposed measures outlined in this report, including better public health, improved public spaces, economic growth, and long-term savings for property owners.

Achieving Dublin's reduction target will require both persistence and adaptability.

A. Implementation

Ensuring that the recommended measures translate from policy language into on-the-ground results is critical to the success of the CAP. Some actions will require inter-departmental or inter-agency cooperation and appropriate partnerships will be established accordingly. Other actions will require jurisdictional partners, businesses and our community to take action.

As part of the implementation, the City shall identify which measures apply to different types of new development projects, discerning between voluntary and mandatory measures. A checklist has been developed which illustrates the reduction measures that would apply to new development in the City, including residential and commercial projects (refer to Appendix D). The City shall include a mechanism for reviewing and determining if all applicable mandatory measures are being adequately applied to new development projects as part of the development review process. Identification of implementation steps and parties responsible for ensuring implementation of each action shall be included in approval documents for each project.

B. Monitoring

The City of Dublin's Environmental Services Division will work with various departments within the City to monitor the results that are achieved by the various CAP programs and policies. A few examples of the type of policies in the plan that will be monitored are highlighted below:

1. Construction of bicycle lanes – the adopted Bikeways Master Plan proposes 55.2 miles of Class I, II or III bike lanes (currently there are 21.4 miles of bike lanes). The City will track the miles of bike lanes that are constructed each year.

2. Energy Upgrades California Program – this program establishes countywide building retrofit measures and specifications for energy efficiency, water and resource conservation, and indoor air quality and health. It is estimated that there will be a 7% participation rate among housing units in the City. City Staff will monitor the homes that participate in this program.

3. Construction & Demolition (C&D) Debris Ordinance – the City's existing C&D Ordinance requires that 100% of asphalt and concrete be recycled and a minimum of 50% of all other materials be recycled. Environmental Services Staff and the Building

Division track the percentages of C&D debris that are recycled. The City's diversion rate has consistently been between 80% and 90% since 2005.

4. Citywide Diversion Goal – the City of Dublin has adopted a goal to divert 75% of waste from the landfill. The City of Dublin reports to CalRecycle on an annual basis on the percentages of waste that is diverted from the landfill. The City will continue to monitor its diversion rates and explore additional programs to help reach the 75% diversion goal.

5. Green Building Ordinance – the City's Green Building Ordinance requires residential projects over 20 units to reach 50 points on the GreenPoint Rating system. The Building Division works with project developers at the entitlement and building permit stages to ensure that the minimum 50 points is achieved.

Monitoring results is critical to verifying that the various policies and programs within the City's CAP are achieving the anticipated GHG emission reductions that have been anticipated.

C. Periodic Review

The City is committed to periodically conducting a review of the CAP to determine its progress in reducing GHG emissions within the City. Environmental Services Staff will conduct the periodic reviews. The process of conducting a periodic review will allow the City to demonstrate progress toward local emissions reduction targets and identify opportunities to integrate new or improved measures into the emissions reduction plan, including additional measures if necessary to meet the reduction target. The City of Dublin will review the CAP on an annual basis to verify that the various reduction measures are being implemented appropriately. Additionally, the City will re-inventory its emissions every 5 years.

D. Point of Control

The table below lists the primary point of contact and locus of control for each individual reduction measure. Specifically, the relevant department within the City is highlighted, within which the implementation and ongoing activities will take place. Assigning and clarifying the responsible party is an impartment part of ensuring that the City achieves its goals as outlined and projected within the CAP.

Primary Departments Responsible for Individual Reduction Measures		
Measure Number and Title	**Department Responsible**	**Timeframe**
A. Communitywide Measures		
A.1. Transportation and Land Use Measures		
A.1.1. Transit-Oriented Development	Community Development	2020
A.1.2. High-Density Development	Community Development	2020
A.1.3. Mixed-Use Development	Community Development	2020
A.1.4. Bicycle Parking Requirements	Public Works	Ongoing
A.1.5. Streetscape Master Plan	Public Works	Ongoing
A.1.6. Multi-Modal Map	Community Development	Ongoing
A.1.7. Electric and Plug In-Hybrid Charging Stations at the Library	Public Works	Ongoing
A.1.8. General Plan Community Design and Sustainability Element	Community Development	Ongoing
A.1.9. Work with LAVTA to Improve Transit	Public Works	Ongoing
A.1.10. Bikeways Master Plan	Public Works	2020
A.2. Energy Measures		
A.2.1. Green Building Ordinance	Community Development	2020
A.2.2. Energy Upgrade California	City Manager's Office	Ongoing
A.2.3. Solar Conversion Programs	City Manager's Office	Ongoing
A.2.4. Reduce Solar Installation Permit Fee	Community Development	Ongoing
A.3. Solid Waste and Recycling Measures		
A.3.1. Construction and Demolition Debris Ordinance	Community Development / City Manager's Office	Ongoing
A.3.2. Citywide Diversion Goal of 75%	City Manager's Office	Ongoing
A.3.3. Tiered Rate Structure for Garbage and Recycling	City Manager's Office	Ongoing
A.3.4. Commercial Recycling Program	City Manager's Office	Ongoing
A.3.5. Commercial Food Waste Collection Program	City Manager's Office	Ongoing
A.3.6. Promote Commercial Recycling	City Manager's Office	Ongoing
A.3.7. Promote Multi-family Recycling	City Manager's Office	Ongoing
A.3.8. Curbside Residential Recycling Program	City Manager's Office	Ongoing
A.3.9. Curbside Organics Collection Program	City Manager's Office	Ongoing
B. Municipal Operations Measures		
B.1. Transportation and Land Use Measures		
B.1.1. City Hybrid Vehicles	Public Works	Ongoing
B.1.2. Commute Alternative Program	City Manager's Office	Ongoing
B.2. Energy Measures		
B.2.1. LEED Silver Requirement for New City Buildings > $3mil	Community Development	Ongoing
B.2.2. Window Film on the Civic Center	Public Works	2009
B.2.3. LED Park Lights	Parks & Community Services	2011
B.3. Solid Waste and Recycling Measures		
B.3.1. Bay-Friendly Landscaping Policy	City Manager's Office	Ongoing
C. Public Outreach Programs		
C.1. Great Race for Clean Air	City Manager's Office	Ongoing
C.2. Walk 'n' Roll to School	Public Works	Ongoing
C.3. Work with Schools on "Go Green" Recycling and Composting	City Manager's Office	Ongoing
C.4. AVI Educational Presentations	City Manager's Office	Ongoing
C.5. Promote Bike to Work Day	Public Works	Ongoing

IX. Relationship to the California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires the City to identify the significant environmental impacts of its discretionary actions and to avoid or mitigate those impacts, if feasible. Senate Bill 97 (2007) acknowledges that emissions from greenhouse gases are an environmental issue that requires analysis under CEQA. When the City undertakes a discretionary action for a "project" under CEQA, such as approval of a proposed development project, plan, policy, or code change, the City will evaluate whether that action would result in a significant impact due to greenhouse gas emissions and climate change.

It is unclear if the adoption of the CAP is a "project" under CEQA. Since it is a plan to protect the environment and reduce environmental impacts (due to greenhouse gas emissions or climate change), it may not constitute a "project" or qualify for an exemption under CEQA. The overall purpose of the CAP is to reduce the impact that the community will have on GHG emissions and, therefore, reduce an impact on the environment. However, as with any proposal involving activities relating to development, implementation of the CAP theoretically could potentially result in adverse impacts on the physical environment. Therefore, an Initial Study and Negative Declaration have been prepared by the City pursuant to CEQA to evaluate whether there are any potential adverse environmental impacts of implementing the CAP. Because the CAP will have undergone environmental review under CEQA, and is intended to reduce GHG emissions and climate change impacts in Dublin, it may be relied upon to address the cumulative impacts for future projects consistent with the Plan.

This approach is consistent with CEQA Guidelines Section 15183.5, 15064 and 15130 and the adopted BAAQMD CEQA Guidelines and Thresholds of Significance, which provide a means for jurisdictions to analyze and mitigate the significant effects of GHGs at a programmatic level by adopting a plan for the reduction of GHG emissions. Later, as individual projects are proposed that are consistent with the CAP, the project would be considered to have a less than significant impact (i.e. less than cumulatively considerable contribution) from GHG emissions and climate change.

When determining whether a proposed project is consistent with the CAP, City staff should consider the following:

- The extent to which the project supports or includes applicable strategies and measures, or advances the actions identified in the CAP;
- The consistency of the project with Association of Bay Area Governments (ABAG) population growth projections (*Projections 2009*), which are the basis of the CAP GHG emissions projections; and
- The extent to which the project would interfere with implementation of CAP strategies, measures, or actions.

A project and its CEQA environmental review that relies on this CAP for its GHG emissions and climate change analysis must identify the specific CAP measures applicable to the project and how the project incorporates the measures. If the measures are not otherwise binding and enforceable, they must be incorporated as conditions of approval or mitigation measures applicable to the project.

If the City determines in its environmental review that the proposed project would not substantially comply with the CAP's population growth projections or GHG reduction policies or programs, the Applicant could consider various methods for making the Project consistent with

the CAP, including, but not limited to, revising the project, incorporating alternative reduction measures beyond the reduction measures identified in the CAP (including offsets) to make the Project's GHG emissions levels consistent with the CAP. The impact from GHG emissions from a Project may also be determined to be less than significant under CEQA through an alternative analysis using a standard of significance that is supported by substantial evidence, such as BAAQMD's numerical thresholds (<1,100 MT CO_2e per year or 4.6 metric tons per service population (residents and employees) per year). A determination that a Project does not substantially comply with the CAP shall not in and of itself provide substantial evidence that a Project's impact from GHG emissions is a significant impact under CEQA. It only means that a Project may not be able to rely on the CAP for a determination that the Project's impact is less than significant due to greenhouse gas emissions and climate change (i.e., less than cumulatively considerable contribution to significant cumulative impact).

Appendices

A. *ICLEI Inventory and Projections Report*
B. *Fehr and Peers study re: Transit-Oriented Developments*
C. *Emission Reduction Calculations and Assumptions*
D. *Applicability of GHG Reduction Measures to New Development Projects Checklist*